BULLETIN

OF

The Georgia School of Technology

ORGANIZED 1888

A School of Mechanical, Electrical, Civil and Textile Engineering, Engineering Chemistry, Architecture, Commerce and Industrial Education

A Department of the University of Georgia

CATALOG 1920-1921

ANNOUNCEMENTS 1921-1922

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First Term.

Begins 8:00 A. M., September 21, 1921; ends 8:00 A. M. February 6, 1922.

Entrance Examinations and Re-examinations begin September 16, 1921. Schedule of these examinations will be mailed to applicants after August 1, 1921.

Christmas vacation begins at 5:00 P. M., December 21, 1921; ends 8:00 A. M., January 3, 1922.

Second Term

Begins 8:00 A. M., February 6, 1922; ends June 12, 1922.
Commencement Day, Monday, June 12, 1922.

By order of the Board of Trustees, the only other Holidays to be observed are Thanksgiving Day and Memorial Day (April 26.)

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ROLAND GOOCH .....Electrical Engineering
ROBERT LOWE RUSSELL .....Experimental Engineering
F. G. THOMAS .....Experimental Engineering
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ASSISTANTS

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Student Dobbins, R. O. T. C.,

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ASSISTANTS

(One officer and three N. C. O.'s to be detailed by September, 1921).
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Student Activities.—Professors Emerson, Wallace, Field, F. P. Smith, and Perry.

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William Vail Lovell ..... E. E.
Thomas Grayson Seidell ..... E. E.

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Samuel Richard Arnold
George Scott Brown
John Wright Brown
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Jesse Frank Carreker
Frank Henry Cooper
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Carleton Ula Edwards
William Ralph Glisson
Roland Gooch
Sam Younger Guess
Robert Webster Hardin
Emerson Holleman
Buman Hill Jarrard
Laurence Freeman Kent
Albert Sidney Lewis
James MacDonald
John Wilson Mason, Jr.
Walter George Mercer
Harold Moise
Oscar Stuart Oldknow
Leon Moulton Pearsall
Carl Fred Phillips
John Cornelius Pye
James Thomas Roberts
Carl Hickman Schofield
Isham Mallie Sheffield, Jr.
Harry Laurence Stearnes, Jr.
Lawton Terry Stevens
John Henry Vickers
Carlyle Mumford Ward
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Walker Estine Smith
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Ivy Hendrix Smith
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William Paul Speir
John Hannibal Stanfield
William Maynard Tanner
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Joseph Whitner
Joe Wylie Whittenberg
Leonidas Clayton Daniel (1919)

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Louis Young Dawson, Jr.
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James Robertson Wikle
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William Nolan Murrah
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CERTIFICATE IN TWO-YEAR ARCHITECTURE COURSE

Hunter Jowers Price

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Bardwell, R. N., Jr.	Fulton
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Bell, R. P.	Virginia
Betts, R. B.	Floyd
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Black, S. A.	Fulton
Bleckley, S. C.	Habersham
Boone, C. H.	Coweta
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***Broach, R. C.**	Walton
Bryan, R. W.	Catoosa
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Burnham, H. M.	Chatham
***Carnes, E. M.**	Cobb
Carr, J. L.	Alabama
Childs, J. W.	Barrow
Cloud, O. L.	N. Carolina
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Curry, W. H.	Mitchell
Daniel, H. N.	Evans
DeNeergaard, C. G.	N. Carolina
DesPortes, C. J.	Muscogee
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Edwards, J. T.	Fayette
Ewing, C.	Mississippi
Ferst, F. W.	Chatham
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Frankum, J. B.	Franklin
Fraser, G. R.	Fulton
Fuller, W. M.	Cobb
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Gessner, F. B.	Louisiana
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Parkinson, R. D.	Chatham
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Ravenel, T. C.	Fulton
Rice, D. D.	Louisiana
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***Robison, W. A.**	Richmond
Russell, H. W.	Macon
Russell, R. L.	Fulton
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Shepherd, J. O.	Fulton
Sledge, E. D., Jr.	Clarke
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Weston, T. P., Jr.	DeKalb
Whelchel, C. C.	Madison
Whittaker, A. D., Jr	Fulton
Wilkins, B. H.	Tennessee
Wilson, C. B.	Jackson
Wood, R. M.	Alabama
***Yates, T. A.**	Walker
Young, C. E.	Florida
Young, R. H.	Bartow

JUNIOR CLASS

NAME	COUNTY OR STATE
Adams, C. C.	Fulton
***Allen, E. W.**	Fulton
Allen, T. J.	Fulton
Alling, R. W.	Cobb
***Allman, R. M.**	Stephens
Almond, E. P.	Elbert
Anderson, G. D.	Cobb
Armbrecht, C. P.	Alabama
Aycock, J. A.	Meriwether
Bailey, N. H.	Spalding
Baker, F. W.	N. Carolina
Barker, W. R.	Hall
Barnhardt, T. M.	N. Carolina
Barron, D. I.	Habersham
Barry, A. F.	Fulton
Basarrate, A.	Cuba
Bassett, O. V.	Fulton
Baumgardner, H. L.	Washington
Belding, M. D.	Richmond
Bell, H. I.	Fulton
Beverly, Wm.	Virginia
Blackwell, P. K.	S. Carolina
Booth, W. W.	Fulton
Bowyer, F. L.	Florida
Bozarth, W. F.	Virginia
Brazelton, C. M.	Texas
Brock, O. S.	Polk
Brooks, W. P.	Chatham
Brown, A. P.	Fulton
Bruce, W. M.	Arkansas
Brunson, L. L.	S. Carolina
Buie, T. A.	Texas
Bullock, E. W.	Dodge
Burks, B. F.	Fulton
Burpitt, J. W.	Fulton
Busch, L. R.	Laurens
Byrd, J. E.	Bulloch
Calhoun, A. B.	Fulton
Calhoun, O. D.	Fulton
Camp, L. K.	Muscogee
Campbell, W. W.	Fulton
Carter, T. F., Jr.	Stewart
Cole, R. D.	Coweta
Coleman, C. S.	Tennessee
Collat, E.	Chatham
Collins, J. J.	Chatham
***Conrad, J. E.**	N. Carolina
Cox, W. F.	Meriwether
Cox, Wm. T.	Oklahoma
Creighton, G. J.	Sumter
Cronk, J. A.	Chatham
Culler, F. I	S. Carolina
Cureton, C. H.	Dade
D'Arcy, Jas. Jr.	Floyd
Darsey, A. L.	Decatur
Davidson, C. L.	Tennessee
Davis, E. M.	S. Carolina
***Davis, O. G.**	Fulton
deDiego, A.	Cuba
Dillard, J. P.	Texas
***Dorr, F. J.**	Richmond
Dudley, C. H.	Fulton
Dunwody, R. G. Jr.	Fulton
Edmond, Robt., Jr.	Fulton
Elder, M. H.	Fulton
Fenton, M. J.	Tennessee
***Fincher, J. T.**	Fulton
Flowers, A. R.	S. Carolina
Fort, J. A., Jr.	Florida
Fox, A. J.	N. Carolina
Francis, R. L., Jr.	N. Carolina
Frankum, J. L.	Franklin
Friedman, J.	Fulton
Gaboury, M. N.	Alabama
Gaines, H. L.	Hall
Garlington, T. R.	Polk
***Getzen, J. E.**	Jackson
Gilbert, J. H.	Tennessee
Granger, H. G.	Bartow
Graydon, E. L., Jr.	Fulton

NAME	COUNTY OR STATE
Greene, A. B., Jr.	Jones
Greene, A. D.	Thomas
*Greene, M. C.	Gordon
Griffin, B. E.	Coffee
Hamlett, J. E.	Fulton
Harlan, J. W.	Fulton
Harris, R. D.	Crisp
Harrison, F.	McDuffie
Hasson, J. W.	Cherokee
Hawes, A. L.	Elbert
Herin, T. D.	Florida
Herring, T. F.	Dooly
Heyward, E. B.	Habersham
Hill, J. M.	Muscogee
Hill, W. S.	Mitchell
Hines, E. W.	Baldwin
Hirleman, G. W.	Fulton
Hitt, A.	Pike
Hodges, A. F.	Sumter
Hoffman, G. F.	Chatham
Holt, W. K.	Gwinnett
Hooker, S. D.	N. Carolina
Hopkins, F. J.	Butts
*Hopkins, R. K.	Florida
Horne, J. E.	Pike
Houser, R. P.	Houston
Howell, E. H.	Fulton
Hudgins, H. C., Jr.	Cobb
Humphries, H. D.	Cobb
Hutcheson, R. H.	Douglas
Inglis, J. L.	Alabama
Ingram, L. C.	Coweta
Jackson, W. J.	N. Carolina
Jefferies, J. W.	S. Carolina
Jenks, E. L.	Fulton
Johns, W. B., Jr.	Morgan
Johnson, T. C.	Coweta
Jones, C. L.	Kansas
Jones, C. P., Jr.	Idaho
Jones, J. J., Jr.	Fulton
Jones, R. T.	Fulton
Kennedy, W. T., Jr.	Tennessee
Khoury, M. A.	Dodge
Kidd, J. P.	Coweta
Kight, T.	Bibb
Kinnebrew, W. O.	Fulton
Kinney, W. O., Jr.	Bibb
Kling, W. L.	Chattooga
Kyle, B. E.	Texas
Kyle, W. W.	Texas
Lasseter, K. C.	Florida
Lathem, J. G.	Fulton
Leas, W. M.	Fulton
LeBey, C. D.	Chatham
Lengnick, E. E.	S. Carolina
Leonard, A. L.	Dekalb
Levey, H. N.	Florida
Levy, L. R.	Chatham
Lewis, H. M.	Louisiana
Little, A. J., Jr.	Richmond
Locke, J. P.	Virginia
Looper, G.	Whitfield
*Lord, A.	N. Carolina
Lowe, F. E.	Bibb
Lyles, C. T.	Florida
Madden, B. F.	Tennessee
*Malti, M. G.	Syria
Martin, B. H.	Muscogee
Matheson, D. J.	S. Carolina
*Matson, R. M.	Alabama
*Maynard, R. L.	Fulton
McCarty, W. B.	Whitfield
McClenaghan, G. P.	S. Carolina
McCrory, H. S.	Schley
McCullough, J. E.	Jasper
McKey, T. H.	Lowndes
McRee, C. A.	Oconee
Mealor, W. T.	Hall
Merritt, E. H.	Bibb
Merritt, H. C.	N. Carolina
Miller, J. O.	Fulton
Miller, L. S.	Glynn
Milner, T. C.	Bartow
Mobley, J. H.	Telfair
Montgomery, T. B.	Meriwether
Montgomery, W. A.	Mississippi
Moore, D. C.	Fulton
Moses, Wm. Jr.	Tennessee
Moss, T. S.	Clarke
Mundy, I. L.	Polk
Murdaugh, H. V., Jr.	S. Carolina
Murphey, J. E.	Richmond
Murrah, E. P.	Muscogee
Naff, G. T.	Louisiana
Newton, C. S.	Mississippi
*Nicholas, L. R.	Ware
Nicolas, A. R.	Chatham
Nicolas, T. C.	Chatham
*Ogram, A.	Fulton
O'Leary, D. J.	Chatham
Oosterhoudt, O. J.	Fulton
Osborne, D. W.	Cobb
Paden, C. N.	Dekalb
Palin, A. W.	Dougherty
Parrott, L. B.	Ben Hill
Parsons, W. N., Jr.	Pulaski
Partridge, A. D.	DeKalb
Paschal, R. S.	Bulloch

NAME	COUNTY OR STATE
Patterson, W. F.	Fulton
Patton, J. E., Jr.	Tennessee
Patton, R.	Tennessee
Perryman, A. W.	Fulton
Peteet, W. D.	Mississippi
Phillips, D. W.	Florida
Phillips, G. A.	Fulton
Phillips, T. H.	Fulton
Pittman, C. E.	Fulton
Prescott, T. S.	DeKalb
Pujol, J. B.	Cuba
Radford, R. P.	Kentucky
*Richardson, J. H.	Mississippi
Roberts, C. R.	Muscogee
Roddenbery, W. B. Jr.	Grady
*Rose, A. W.	Bleckley
Ross, W. A.	Louisiana
Salisbury, T. M.	Muscogee
Sanders, T. F.	Emanuel
Scarboro, D. D.	Colquitt
Scheuer, J. B.	Bartow
Schofield, J. S. Jr.	Bibb
Scott, H. A.	Fulton
*Sessions, A. D.	Cobb
*Sheats, I H.	Bartow
Sherrill, F. A.	N. Carolina
Shoemaker, G. W.	Chatham
Short, W. B.	Marion
Simonds, A.	S. Carolina
Simpson, S. S.	Fulton
Slager, J. H.	Fulton
Smalley, F. W.	Chatham
Smith, A. Y.	Florida
Smith, B. W.	Elbert
Smith, H. D.	Richmond
Smith, J. P.	Fulton
Smith, J. W.	Bibb
Smith, T. W.	Muscogee
Stakely, W. N.	Alabama
Stambaugh, N. F.	Habersham
Staton, A. H.	Fulton
Stephens, C. F.	Stewart
Stevens, C. H.	Madison
Stewman, J. A., Jr.	S. Carolina
Stokes, R. H.	Fulton
Stone, J. H.	Carroll
Stoney, A. T. S.	S. Carolina
Stovall, S. C.	Fulton
Stribling, P. O., Jr.	Fulton
Summers, W. C.	Coweta
Tabor, J. M.	Bibb
Tappan, L. H.	Fulton
*Taylor, C. A. Jr.	Glynn
Temple, W. S.	Mississippi
Tennent, T. H.	Fulton
Thomas, E. G.	Dekalb
*Thomason, C. Y.	Clarke
Thomson, M. F.	Louisiana
Tomlinson, J. L.	Texas
Trammell, L. N.	Whitfield
Tucker, T. T.	N. Carolina
Turner, M. E.	N. Carolina
Tyler, J. M.	N. Carolina
*Vogt, A. G.	Fulton
Waldrop, G.	Fulton
*Wallace, E. V.	Fulton
Wallis, L. D.	Sumter
Walraven, D. E.	Gordon
Walton, P.	Muscogee
Webb, R. F.	Chatham
*Weil, A. S.	Florida
Welker, H. E.	Texas
Weston, C. W.	Mississippi
*Whitehurst, S. A.	Chatham
Whiteley, J. W.	Warren
Wikle, H. W.	DeKalb
Williams, W. L.	Dooly
*Williamson, E. J.	Putnam
Wilson, H. R.	California
Wilson, J. G.	Glynn
Wilson, R. P.	Fulton
Wolfe, F. W.	N. Carolina
Yeager, A. A.	Texas
Young, R. C.	Fulton

SOPHOMORE CLASS

Adams, G. W.	Wilkes
Adkins, L. A.	McDuffie
Akin, H.	Glynn
Alexander, H. E.	Oklahoma
Alford, J. I.	Gwinnett
Almand, H.	Rockdale
Annis, C. B.	Mississippi
Armentrout, G. E.	Richmond
Armistead, F.	Fulton
Armstrong, G. E.	N. Carolina
Arnold, S. E.	Texas
Arnold, W. H.	Florida
Asbury, J. W.	Florida
Asbury, M. B.	Habersham
Atchison, E. R.	Elbert
Attridge, O. C.	Tennessee
Attwell, L. L.	Richmond
Armstrong, F. M.	Texas

NAME	COUNTY OR STATE
Avera, B. L.	Houston
Baker, E. L.	Muscogee
Baker, W. A.	Fulton
Ballard, L.	Glynn
Barnette, W. R.	N. Carolina
Barro, J. S.	Cuba
*Bartlett, Geo. P.	Fulton
Bates, A. G.	Alabama
Bates, W. E., Jr.	Ware
Baynard, J. S.	Bibb
Beamon, R. E.	Mississippi
Beard, D. M.	Fulton
Becknell, L. M.	Fulton
Bell, J. F.	DeKalb
Bennet, L. J.	Glynn
Bennett, H. B.	Fulton
Binford, W. B.	Spalding
Black, A. A.	Florida
Blair, A.	Bibb
Blake, O.	New York
*Blumenthal, L. M.	Louisiana
Bond, H. P.	Fulton
Bonds, E. R.	Fulton
Bone, O. H.	Fulton
Bonner, D. H.	Texas
*Borum, V. L.	Florida
Boyer, M. W.	Indiana
Bozeman, F. B.	S. Carolina
Branch, W. M.	Polk
Brantley, R. S.	Thomas
Bratton, A.	S. Carolina
Bratton, S. P.	Tennessee
Brewster, J. D.	Coweta
Brewton, J. W.	Evans
Brodnax, G. H.	Fulton
Brooks, H. O.	Colquitt
Brooks, N. E.	Fulton
*Brosnan, D. W., Jr.	Dougherty
Brown, H. B.	Tennessee
Brown, J. D.	Bleckley
Brown, M. G.	Elbert
Brown, N. A.	Muscogee
Broyles, C. J.	Tennessee
*Bullock, E. S.	Florida
Burk, J. H.	Fulton
Burrus, J. P., Jr.	Tennessee
Butler, C. B.	Muscogee
*Butler, H. A.	Chatham
Caldwell, G. R.	Mississippi
Caldwell, H. G.	Tennessee
Campbell, C. Rogers.	Louisiana
Campbell, T. P.	Tennessee
*Campbell, W. J.	Florida
Cannon, H.	Fulton
*Carlisle, I. R., Jr.	Fulton
Carswell, J. W.	Burke
Carter, C. S.	Gwinnett
Carter, H. D.	DeKalb
*Carter, H. M.	Texas
Chambliss, J. M.	Coweta
*Chapman, H. B.	Dooly
Chason, A. L.	Colquitt
Chiles, J. O.	Fulton
Cilley, J. H. P.	N. Carolina
*Clark, H.	Alabama
Clifton, W. L., Jr.	Fulton
Coalson, W. P.	Floyd
Coleman, S. T., Jr.	Bibb
Connor, S. A.	Cobb
Cook, S. B.	Tennessee
*Cooper, A. J.	Paulding
Corwin, T. L.	New Jersey
Coslow, G. R.	Florida
Cotton, F. E.	N. Carolina
Coulbourn, E. R.	Alabama
*Cox, B. C.	Cherokee
Cox, R. H.	Bartow
Craig, J. M.	S. Carolina
Culler, T. R.	S. Carolina
*Cunliff, D. D.	Muscogee
Cunningham, E. F.	Chatham
Cushman, P. G.	S. Carolina
Darling, E. L. Jr.,	Pierce
Daughtry, H. L. Jr.,	Butts
Daves, P. G.	Bartow
Davis, A. H.	Mississippi
Davis, A. W.	Harris
*Davis, V. M.	Floyd
Davis, W. C.	DeKalb
Deihl, C. A.	Fulton
Dendy, G. R.	Mississippi
Dendy, W. E. Jr.	DeKalb
Derry, H. P.	Bibb
Dimmock, W. E.	Richmond
Dodenhoff, W. D.	Fulton
Donalson, J. M.	Early
Dowman, G. F.	Fulton
Drew, T. C.	Bibb
DuBose, H. I.	Fulton
Durr, R. L.	Fulton
Dunson, H. T.	Louisiana
Echols, G. H.	Fulton
Eckels, J. W.	Fulton
*Edwards, W. A.	Fulton
Ellerbe, H. L.	Fulton
Engel, A. B.	Walker
England, J. A.	Fulton
English, A. C.	Texas

NAME	COUNTY OR STATE
Enloe, S. W.	N. Carolina
Erdberg, I. H.	Oklahoma
Erwin, T. C.	DeKalb
*Everett, H. K.	Gordon
Everett, J. E.	Bleckley
Everett, T. R.	Bleckley
Fahnestock, T. V. L.	S. Carolina
Fedderwitz, H. I.	Chatham
Fentress, T. S.	Virginia
Fife, J. C. Jr.	Fulton
Finkelstein, J.	Fulton
Fleetwood, C. G.	Chatham
Fleming, W. B.	Florida
Flowers, R. B.	Fulton
Floyd, C. L.	Illinois
Fox, H. S.	Kentucky
Freeman, H. S.	Florida
Frye, C. A.	Oklahoma
Furber, E. L.	Mexico
Garden, H. B.	Bibb
Garrison, R. R.	N. Carolina
Gary, J. N.	Newton
*Gassen, L. J.	Louisiana
Gault, J. H.	Fulton
Giaver, E. W.	Illinois
Gibson, C. E.	Thomas
Gibson, W. W.	Thomas
*Gill, J. B. Jr.	N. Carolina
Giller, Chas.	Florida
Girardeau, M. D.	Telfair
Glover, B. A.	Fulton
Glover, T. A.	Fulton
Goode, J. C.	Spalding
Goodhart, R. H.	Fulton
Goodloe, E. E.	Virginia
Goodloe, E. G.	Virginia
Gradick, L. E.	Florida
Grady, E. G.	Chatham
Graf, F. W.	Fulton
Graham, C. H.	Fulton
Granath, I. H.	Fulton
Graydon, W. P.	Fulton
Griffin, N. L.	Whitfield
Griggs, J. R. Jr.	Cobb
Grossman, A.	Richmond
Hahn, E. W.	S. Carolina
Haire, J. M	Florida
Hall, E. D.	Chatham
Haller, K. H.	Florida
*Hamilton, S. M.	Whitfield
Hamlett, R. C.	Fulton
Hardin, E. E.	Jasper
Hare, W. F.	Texas
Harkey, R. F	Florida
Harper, P. F.	Virginia
Harris, A. W.	Chatham
Harris, D. D.	Bibb
Harris, R. C.	Crisp
Harwell, E. W.	Fulton
Hassell, J. F.	Tennessee
Hauenstein, R. F.	Mississippi
Hemminger, G. T.	Bibb
Hendricks, J. W. Jr.	Burke
Henley, F.	Fulton
Henley, M.	Fulton
Henry, J. S.	DeKalb
Hensley, T. W.	Oklahoma
*Hiers, J. B. Jr.	Florida
Higdon, J. J.	Fulton
Higginbotham, E. F. Jr.	Glynn
Hill, J. J.	Florida
Hill, W. F.	Hart
Hiscox, D. C.	Fulton
Hodge, E. W.	Louisiana
Hollberg, C. F.	Coweta
Holleman, C.	DeKalb
Holliman, J. H	Wilkinson
Hood, O. J.	Louisiana
Hooker, W. A.	Minnesota
Horne, W. N.	Florida
Howard, O. T.	Muscogee
Howard, R. F.	Bibb
Howell, H. A.	Richmond
Hubert, W. L.	Hancock
Hudgens, J. N. Jr.	S. Carolina
*Hunt, A. T.	Louisiana
Hussey, E. O.	Ben Hill
Ingram, J. W	Coweta
Jackson, G. A.	Toombs
Jennings, J. L.	Troup
Jett, W. S.	Tennessee
Jewell, J. D.	Hall
Johnson, C. E.	Fulton
*Johnson, C. P.	Muscogee
Jones, A.	Baldwin
Kanner, I. H.	Florida
Keen, J. L. Jr.	Laurens
Kelley, T.	Gwinnett
Kelly, R. J.	Jackson
Kendrick, J. W.	S. Carolina
*Kennedy, C. M.	Alabama
Kennedy, M. D.	Crisp
Kennedy, P. J.	Tattnall
*Killen, J. T. Jr.	Bibb
Kimble, F. M. Jr.	Worth
Kinard, H. B.	S. Carolina
Kincaid, Geo.	Alabama

NAME	COUNTY OR STATE
King, J. T.	Tennessee
Kirkwood, T. A.	S. Carolina
Klass, A. R. A.	Alabama
Knowles, H. P.	N. Carolina
Kohlruss, C. F.	Richmond
Krauss, W. W.	Glynn
Lane, T. G.	Bibb
Larsen, C. C.	Colorado
Law, W. F.	Hall
Leaphart, F. P.	S. Carolina
Leasman, C. F.	Minnesota
LeCraw, A. E.	Fulton
Lee, E. A.	N. Carolina
Leppert, J. H.	Fulton
Levy, H. S.	Louisiana
Levy, L. K.	Richmond
Lide, B. S.	Mississippi
***Linch, W. E.**	Butts
Lockwood, C. P.	Muscogee
***Longley, F. R.**	Tennessee
Low, M. C.	Henry
Lowe, J. F.	Wilkes
Lowry, A. B. S.	Fulton
Luehrmann, A. W.	Louisiana
Lyman, W. P.	Alabama
Lyon, B. R.	N. Carolina
Malone, R. W.	Bibb
Marlowe, J. F.	Jackson
Marshall, M. L.	Mississippi
Martin, R. L.	DeKalb
Mattox, R. H.	Florida
Maxwell, P. M.	**Grady**
Mayer, R. P.	Tennessee
Mayo, T. T.	Fulton
***McBride, Geo.**	Coweta
McBride, L. C.	Texas
McCall, R. L.	Screven
McCathern, H. W.	Fulton
***McClellan, F. R.**	Ware
McClure, J. N. Jr.	Gwinnett
McClure, L. C.	Florida
McConnell, T. J.	Fulton
McDonald, R. K.	Tennessee
McDonough, J. J.	Chatham
McGee, H. S.	Monroe
McIntyre, J. F.	Arkansas
McIver, R. S. Jr.	S. Carolina
McKinney, R. W.	Tennessee
McMaster, W. J.	Texas
McMorrough, T. B.	Polk
McMurry, C. P.	Fulton
Meadows, E. H.	Louisiana
Means, J. E.	Fulton
Mew, G. H.	Chatham
Middleton, C. R.	Stewart
Miller, H. G.	Gordon
Miller, R. E.	Hall
Miller, W. H.	Liberty
Milne, K. C.	Florida
Minchener, C. E.	Fulton
***Miner, C. C.**	Hall
Minor, J. A.	Bibb
Mitchell, T. H.	Washington
Mitchell, W. M.	Tift
Mooney, C. H.	Fulton
Moore, H. A.	Madison
Moore, L. G. Jr.	Florida
Moran, L. E.	Hancock
Morgan, E. R.	Bibb
Morrison, W. B.	Mont'g
Moses, W. F.	Fulton
Murdaugh, J. P. Jr.	Florida
Murphy, W. F. Jr.	N. Carolina
Murray, J. B.	N. Carolina
Neblett, R. S.	Texas
Neighbors, G. J.	Texas
Nichols, D. G.	Chatham
Nicholson, L.	Texas
Nolen, J. T.	Tennessee
Norman, N. J. Jr.	Chatham
Norris, B. D.	Warren
***Northern, K. W.**	Tennessee
O'Conner, B. J.	Mont'g
Oliver, R. S.	Sumter
Osborne, H. P.	Franklin
Overby, H. O. Jr.	Stewart
Page, J. K.	Laurens
Park, M. B.	Fulton
Park, M. L.	Fulton
***Parker, L. G.**	Florida
Parker, W. L.	Thomas
Parkins, W. C.	Calhoun
Parks, A. C.	Mississippi
Passmore, C. C.	Lowndes
Patrick, D. H.	Rockdale
Patterson, J. W.	Fulton
Patterson, K. M.	Virginia
Patton, J. M.	Walker
Patton, L. K.	Alabama
Paulk, J. W.	Early
Pearson, Chas. Jr.	Florida
Pepper, H. E.	Mississippi
Perry, L. K.	Fulton
Phillips, W. R.	Fulton
Pinkston, W. J.	Lowndes
Porter, G. H. Jr.	Fulton
Povoa, G. M.	S. America
Pritchett, E. C.	Fulton

NAME	COUNTY OR STATE
Pritchett, L. C.	Fulton
Prout, H. W.	DeKalb
Quallins, G. A.	Mass.
Radford, R. A.	Walton
Rainey, J. N.	DeKalb
Reed, W. T.	Virginia
Regenold, P. H.	Mississippi
Reilly, F. W.	Tennessee
Reynolds, J. H. F.	Tennessee
Richard, E. C.	Florida
Richardson, W. W.	Dis. of Col.
Rickman, J. P.	S. Carolina
Rikard, M. W.	S. Carolina
Rittenbaum, A.	Fulton
Roberts, H. R.	Chatham
Roberts, R.	Franklin
Rogers, L. G.	N. Carolina
Rountree, G. P.	Emanuel
Rourk, J. W.	Chatham
***Rush, L. K.**	Tennessee
Rushing, O. W.	Fulton
Russey, H. W.	Fulton
Sample, T. G.	Floyd
Sanders R. B.	Fulton
Sanders, R. Q.	DeKalb
Santamaria, H.	Cuba
Sasek, G.	Fulton
Saussy, C. W.	Chatham
Saxon, F. A.	Richmond
Seyle, G. F.	Chatham
Shearon, G. W.	Mississippi
Shepard, C. G.	Bibb
Shewmake, J. T.	Laurens
Shuster, E. B.	Tennessee
Sinclair, D.	Colquitt
Skannal, H. L. Jr.	Louisiana
Skelton, C. C.	Wilkinson
Smith, G. M.	Fulton
Smith, J. E.	Florida
Smith, J. M.	Dougherty
Smith, M. M.	Fulton
Smith, N. G.	Jones
Smith, R. Y.	Glynn
Smith, T. E.	**Franklin**
***Sorell, F. J.**	Tennessee
Stallworth, M. C. Jr.	Alabama
Starbird, H. V.	Florida
Steinhauer, W. L.	Fulton
Stevens, A. F.	Thomas
Stewart, F. R. H.	Clarke
Stewart, O. B.	Fulton
Stewart, W. A.	Fulton
Stokes, F. R.	Newton
Stone, D. M.	Tennessee
Stringer, T. F.	Muscogee
Stripling, T.	Harris
Strother, F. V.	Jefferson
Strum, A. D.	Florida
Sullivan, E. S.	Fulton
Sutton, J. M.	Tennessee
Swetman, J. W.	Mississippi
Sylvester, C. D.	Richmond
Tabor, F. H.	Elbert
Talley, J. L.	Bibb
Tanner, F. L. Jr.	Fulton
Teague, P. T.	Richmond
***Tennison, A. A.**	Arkansas
Thomas, J. S.	N. Carolina
Thompson, G. A.	New York
Tidwell, H. A.	Fulton
Tippetts, E. F.	Florida
Torbett, J. L.	Muscogee
Tumlin, T. H.	Fulton
Turner, Jas. H.	Fulton
***Turner, Julian H.**	Butts
Vaughan, R. H.	Louisiana
***Vaughan, W. H.**	Mississippi
Verdery, M. C.	Richmond
Vickery, G. L.	N. Carolina
Vigal, J. C.	Bibb
***Walker, R. E.**	Glynn
Walstrum, J. N.	Alabama
Walthall, E. C.	Fulton
Walton, M. M.	Mississippi
Walton, T. L.	Oklahoma
Ware, J. H. Jr.	Wilcox
Warren, J. W.	Florida
Warren, Noah	Carroll
Watkins, T. H.	DeKalb
Watson, A. H.	S. Carolina
Watson, T. H.	S. Carolina
Watters, J. T.	Floyd
Webb, R. S.	Fulton
Webb, W. I.	Monroe
***Weber, H. S.**	Tennessee
***Weeks, H. R.**	S. Carolina
Weems, J. W.	Floyd
Weir, W. H.	S. Carolina
Welch, H. L.	Mississippi
Wells, B. H.	Florida
Westbrook, W. L.	Mississippi
Wethington, R. W.	Thomas
Whitaker, G. A.	Florida
Whitten, F. S.	Evans
Wilde, C. T.	Tennessee
Wilhelmi, R. O.	Alabama
Wilkinson, J. M.	Chatham
Wilkinson, W. R.	Evans

NAME	COUNTY OR STATE
Williams, J. F. Jr.	Texas
Williamson, H. C.	Mississippi
Wililngham, R. F.	DeKalb
Willson, R. S. Jr.	Toombs
*Wilson, W. L.	Thomas
Wilton, H. W.	Bibb
Winstead, P. C.	S. Carolina
Wise, R. V.	Mississippi
Wolff W. M.	Fulton
Wood, B. L.	Stewart
Worley, B. R.	Tennessee
Wright, F. D.	S. Carolina
Wright, J. G.	Cook
Wyatt, I. E.	Mississippi

FRESHMAN CLASS

Aaron, C. S.	Bulloch
Abrey, E. W.	Arkansas
Adams, E. M.	Fulton
Adams, H. L.	Texas
*Adams, W. G.	N. Carolina
*Adamson, C. F.	Chatham
Aikens, K. L.	Fulton
Akin, W. D.	Glynn
Albert, F. G.	Ohio
*Albright, J. G.	Fulton
Alexander, P. L.	Bibb
Alexander, W. B.	Muscogee
Alford, J. M.	Florida
Alfriend, L. P.	Hancock
Allen, L. K.	Mississippi
Allen, W. H.	S. Carolina
Alley, J. H.	White
Allison, H. R.	N. Carolina
Allman, J. I. Jr.	Stephens
Amorous, W. W.	Cobb
Anderson, M. H.	Florida
Anderson, R.	
Anton, G. F.	Fulton
Armstrong, J. R.	Dougherty
Averett, J. E.	Muscogee
Avery, C. B.	Troup
Baggs, L. D. Jr.	Decatur
*Bahrt, C. W.	Florida
Baker, A. B.	Bibb
Ball, F. M.	Dougherty
Ballowe, R. A.	Alabama
Banner, E. K.	Texas
Barker, I. J.	DeKalb
Barnes, R. M.	Fulton
Barrett, J. C. H.	S. Carolina
Barton, H. P.	Sumter
Battle, J. L.	Muscogee
Batts, A. E.	Irwin
Batts, D. A.	N. Carolina
Baugh, P. H.	Sumter
*Baum, J. P.	Fulton
Bazire, D. C.	Muscogee
Beacham, C. R.	Wheeler
Beasley, C. F.	Alabama
Beatty, C. N. M.	Tennessee
Beck, D. K.	Kentucky
Bell, Thos.	Stewart
Benbow, E. B.	Ohio
Berry, W. G.	Mass.
Betts, O. L.	Floyd
Biggs, J. E.	W.Virginia
Bivins, R. S.	Sumter
Blackwell, W. P.	Walker
Blakely, L. M.	Illinois
Bobbitt, I. E.	Florida
Bolton, F. R.	Louisiana
Bond, S. P.	Sumter
Bonner, J. S.	Texas
Booth, J. H.	Fulton
Boston, L. T.	Fulton
Bowen, C. W.	Richmond
Bowen, H. J.	N. Carolina
Boyle, B. S.	Tennessee
Bradford, R. J.	Fulton
Brady, A. L.	Fulton
*Brasfield, C. T.	Mississippi
Bridges, B. L.	Louisiana
*Britt, W. O.	Upson
Brock, J. H.	Campbell
Brodnax, B. B.	Walton
Brooks, L. A.	Fulton
Broughton, J. J.	S. Carolina
Brown, C. L.	Florida
Brown, C. M.	Fulton
Brown, F. E.	Texas
Brown, J. H. Jr.	Florida
Brown, T. H.	Mississippi
Brown, T. V.	S. Carolina
Bryan, C. M.	Fulton
Bryan, N. W.	Florida
Buchanan, T. M.	Pickens
*Bugg, C. T.	Oglethorpe
*Bull, C. M.	S. Carolina
Burgess, J. Jr.	Twiggs
Burke, E. L.	Wilkes
Burnett, C. P.	Hancock
Burson, Robt.	Walton
Burt, D. D.	Fulton
Busbin, T. E.	Fayette
Butt, F. G.	Marion

NAME	COUNTY OR STATE
Byrd, D. I.	Bulloch
Caldwell, V. M.	Tennessee
Calhoun, P.	Fulton
Calvo, J. del	Cuba
Camp, A. H.	Campbell
Camp, E. M. Jr.	Coweta
Camp, H. W.	Coweta
Campbell, C. Robt.	Illinois
Campbell, J. J.	N. Carolina
Carmichael, J. R.	Butts
Carmine, P. R.	Florida
Carnes, Z. S.	Fulton
Carpenter, G. Jr.	Fulton
*Carroll, A. L.	S. Carolina
Carroll, D. E.	DeKalb
Carter, A. C.	Fulton
Cary, G. R.	Hancock
Cash, W. H.	Tennessee
Cater, J. M.	Brooks
Cauldwell, E. P.	Indiana
Cella, C. A.	New Jersey
Chambers, Wm. Jr.	Muscogee
Cherry, R. S. Jr.	Arkansas
Cheves, R. W.	Macon
Childs, W. H.	Greene
Choate, J. B.	N. Carolina
Clark, J. L.	Fulton
Cleveland, A. L.	Fulton
Cobb, W. E.	Dodge
Coker, S. H.	Mississippi
*Cole, J. O.	Fulton
Cole, T. M.	Coweta
Coleman, E. C.	N. Carolina
Collins, C. G.	Fulton
Colon, C. M.	Louisiana
Conklin, F. E.	Fulton
*Connell, H. R.	Florida
Cook, H. Y.	Heard
Cook, J. V.	Florida
*Cook, L. A.	Louisiana
Cook, R. F.	Macon
Cooper, R. L.	Tennessee
Costley, A. M.	Fulton
Costley, E. M.	Fulton
Couch, W. C.	Coweta
Covington, B. A.	Mississippi
Cox, J. J. J.	Burke
Crary, W. A. Jr.	S. Carolina
Craver, G. J.	N. Carolina
Crowell, H. B. Jr.	Muscogee
*Cureton, T. K. Jr.	Fulton
Cureton, W. C. Jr.	Dade
Daniel, H. B.	Florida
Daniel, J. F.	S. Carolina
Daniel, M. J.	Spalding
Daniel, J. T.	Muscogee
*Daniell, W. F.	Texas
Daughtridge, J .W.	N. Carolina
Davis, A. C.	DeKalb
Davis, A. M.	S. Carolina
Davis, P. R.	Alabama
*Davison, J. B.	Fulton
Day, W. E.	Florida
Deal, I. W.	N. Carolina
DeArmond, J. K.	Fulton
DeBardeleben, W. J.	Fulton
Deering, J. R.	Fulton
DeFore, W. K.	Bibb
*deJarnette, J. R.	Gwinnett
Denicke, C. Jr.	Bibb
Denny, R. A. Jr.	Floyd
Dickenson, G. L.	Decatur
Dobbins, W. E. Jr.	Fulton
Dodd, H. W.	Arkansas
Donaldson, H.	Fulton
Donaldson, M. R.	S. Carolina
Dorn, C. E.	Fulton
Dorough, W. P.	Fulton
Dorsey, A. B. C.	Floyd
Dorsey, S. D.	Fayette
Douglass, W. O.	Fulton
Dowty, S. T.	Arkansas
Duckworth, J. B.	Bibb
Dudley, A. S.	Louisiana
Dunwody, H. R.	Bibb
Durden, J. A.	Emanuel
Durden, W. J.	Candler
*Eastman, W. H.	Fulton
Eckford, E.	Fulton
Edwards, A. G.	Cobb
Egan, C. D.	Louisiana
Eiseman, B. J. Jr.	Fulton
Enloe, L.	Fulton
Epting, H. D.	S. Carolina
Eskew, L. L.	Stephens
Estefani, J. L.	Cuba
Eubanks, H. F.	Houston
Evans, L. A.	Coweta
Exley, F. M.	Chatham
Fambrough, J. M.	Thomas
Fargason, J. T. Jr.	Tennessee
Faris, F. R.	Tennessee
Farnsworth, R. A.	Louisiana
Farnsworth, W. B.	Tennessee
Farnum, W. S.	N. Carolina
Felker, W. N.	Tennessee
Feltus, R. C.	Mississippi
Fenn, W. C.	Alabama
Ferdon, E. M.	Florida
Fiege, S. L.	Fulton

NAME	COUNTY OR STATE
Field, P. H.	Whitfield
*Fincher, H. D.	Monroe
Fincher, S. E.	Fulton
Finley, W. A.	Lowndes
Fitzgerald, J. J.	Arkansas
Fleischer, S. L.	Bibb
Fleming, T. M.	S. Carolina
Fontanills, E. M.	Cuba
Ford, W. R.	Muscogee
Fort, E. A.	Stewart
Fort, S. S.	Stewart
Fortson, H. A.	Richmond
Fortson, L.	Richmond
Fountain, J. W.	Fulton
Franklin, G.	Wash.
*Freedlund, J. I.	Florida
Freeman, D. M.	Fulton
Freeman, H. C.	Muscogee
Freeman, W. P.	Fulton
Froshin, R.	Alabama
*Fulkerson, R. P. Jr.	Arkansas
Garbutt, A. G. Jr.	Echols
Garcia, S. G.	Cuba
Gardner, G. C.	Sumter
Garrard, L. F.	Muscogee
Gaskins, E.	Berrien
Gay, W. L.	Clay
George, L. C.	Mississippi
Gifford, J. E.	Cobb
Glass, H. A.	Fulton
Glenn, J. W.	Louisiana
Glenn, R .M.	Walker
Glisson, F. L.	Decatur
Glover, A. K.	N. Carolina
Godley, J. H.	Chatham
Gonzales, P. O.	Cuba
*Goodburn, R. A.	Florida
Gordon, K. W.	Florida
Gordon, M.	Bibb
Gore, C. W.	N. Carolina
Gore, D. J.	N. Carolina
Gouge, D. T.	Tennessee
Grant, B. H.	Floyd
*Gray, E. W. Jr.	Lee
Grayson, E. M.	Louisiana
Grayson, J. H.	Florida
Green, P. W.	S. Carolina
Greenberg, J.	Chatham
*Greet, L.	Alabama
Gregg, A. W.	Texas
*Gregg, J. H.	Fulton
Griffin, R. C.	Fulton
Grobli, J. H.	Fulton
Guerard, W. E.	Chatham
Guinn, J. A.	Rockdale
Gunn, Donald	Floyd
*Hackney, E. L. B.	Florida
Hall, H. F.	Bibb
Hall, J. M.	Florida
*Halsall, L. W.	S. Carolina
Hammond, B. R.	Floyd
Hanahan, P. G. Jr.	Fulton
Hansell, H. S.	Fulton
*Hardin, I. H.	DeKalb
Harris, J. O.	Carroll
Hartford, W. D.	Tennessee
Hartman, W. A.	Fulton
Harvel, H. D.	Fulton
Hayes, G. W.	Conn.
Hayes, V. B.	N. Carolina
*Hays, C. C.	Bibb
Hays, R. L. Jr.	Oklahoma
Heath, F. J.	N. Carolina
Hedden, H. P.	Kentucky
Hendricks, C. E.	Burke
Herndon, E. M.	Walton
Herring, H. E.	Tift
Herring, J. H.	Texas
Higginbotham, W. A.	Elbert
Hill, H. N.	Texas
*Hill, R. L.	Terrell
Hill, W. M.	Wash.
Hillbrath, A. S.	Chatham
Hilton, W. C.	Coffee
Hinde, M. K.	Fulton
Hodges, T. L.	DeKalb
Holland, A. D.	Alabama
Holleman, N. G.	Laurens
Honour, J. W.	DeKalb
Hortman, O. L.	Louisiana
Hubbard, G. A.	Virginia
Huggins, J. A.	Fulton
Hull, F. M.	N. Carolina
Hume, W. W. Jr.	Floyd
Hunt, A. A.	Cobb
Hunt, V. G.	N. Carolina
Hunter, Wm.	Fulton
Ingram, D. J.	Harris
Inman, W. P.	Richmond
Jackson, C. D.	Campbell
Jackson, J. H.	Fulton
Jacobs, S. A.	Barrow
Jacobus, T. C.	Florida
James, D. D.	Tennessee
Jenkins, C. M.	Walton
Jenkins, R. T.	S. Carolina
Jenkins, S. P.	Muscogee
Johnson, E. G.	Fulton

NAME	COUNTY OR STATE
Johnson, F. J.	Muscogee
*Johnson, J. T. Jr.	Alabama
Johnson, L. M.	Muscogee
Johnston, C. V.	Louisiana
Johnston, G. L.	Florida
Johnston, M. T.	Louisiana
Johnstone, R. G.	Fulton
Joiner, B. J.	Houston
Jones, E. G.	S. Carolina
Jones, G. G.	S. Carolina
Jones, W. R.	Decatur
Joplin, J. L.	Louisiana
Jordan, R. A.	Tennessee
Kaylor, W. M.	Lee
*Keenan, W. F.	Bartow
Keller, M. L.	Glynn
Kennedy J. H.	Florida
Keown, W. J.	Floyd
King, A. S.	Louisiana
*Kirchik, D. J.	Florida
Knapp, H. A.	Thomas
Knight, K. C.	Alabama
Knighton, A. C.	Randolph
Kronstadt, E.	Chatham
Kunz, C. H.	Fulton
Kyle, R.	Muscogee
Lambert, G.	Alabama
Lamson, P. B.	Ware
Lancaster, S. B.	Arkansas
Langford, J. K.	Florida
Lanier, E.	Candler
Latimore, D. S.	Tennessee
Law, F. C.	Barrow
Layson, W. T.	Hancock
Ledyard, A. E.	Alabama
Lefkoff, W.	Fulton
Leinbrook, I. A.	Floyd
Lemon, T. G.	Polk
Lide, W. D.	DeKalb
Lilly, O.	Tennessee
Linder, J. W.	Toombs
Lindsay, J. C.	Twiggs
Link, J. A.	DeKalb
Livingston, A. L.	Early
*Logan, T. S.	Elbert
Long, W. P.	Lee
Lotspeich, B. B. Jr.	Fulton
Lowe, G. R.	Marion
Lumry, T. W.	Louisiana
Lunsford, P. E.	Newton
Lynn, J. H.	Florida
Lyons, C .A.	Kentucky
MacDougall, R. L.	Penn.
Malcolm L. A. Jr.	Walton
Mangham, D. B.	Fulton
Marbut, J. R.	Fulton
Marston, E. F.	Muscogee
Martin, R. E.	Tennessee
Martinez, M. E.	Florida
*Matheson, K. G. Jr.	Fulton
Maxwell, F. B.	Tennessee
Maynard, C.	Barrow
*McCarrel, T. M.	S. Carolina
McCarty, J. B.	Whitfield
McCullough, J. M.	Fulton
McDermott, S. N.	Arkansas
McDonald, J. M.	Florida
McDowell, V. E.	Terrell
McElrath, J. M.	Bibb
McEwen, R. K.	Dade
McGee, J. W.	Coweta
McIntosh, W. M.	Elbert
McIntyre, H. E.	Arkansas
*McKee, G. S.	Muscogee
McMillan, R. H.	Fulton
McMurry, H. D.	Franklin
McRitchie, W. A.	Coweta
McWhorter, W. T.	Fulton
Meadow, E. B.	Oglethorpe
Melanson, R. B.	Louisiana
Merritt, E. G.	Fulton
Merry, A. B.	Richmond
Millar, Jno.	Virginia
*Mills, D.	Florida
Mills, W. W.	N. Carolina
Milner, J. W.	Floyd
Mitchell, H. G.	N. Carolina
Mitchell, W. E.	Coweta
Montgomery, J. F.	Mississippi
*Moody, C. G.	Fulton
Moon, E. H.	DeKalb
Moore, A. R.	N. Carolina
Moore, F. B.	Bibb
*Moore, W. A.	Fulton
*Moore, W. M.	S. Carolina
Morgan, J. P.	Dooly
Morris, C. R.	McDuffie
Morris, E. E.	Bibb
Morris, J. E.	McDuffie
Morris, M.	Chatham
Morris, R. B.	Fulton
*Morton, A. B. Jr.	Fulton
Mott, Wm.	Taylor
Murphey, T. M.	Pike
Myers, E. M.	Fulton
Nabell, E. G.	Fulton
Nabers, A. M.	N. Carolina
Narmore, P. B.	Fulton

NAME	COUNTY OR STATE
Nash, F. M.	DeKalb
Navarro, C. B.	Florida
Neese, P. M.	Cobb
Neilson, A. V.	Louisiana
Newman, F. P.	DeKalb
Newton, G. D.	N. Carolina
Nolen, G. D.	Tennessee
Nonemacher, E. L.	Mexico
North, A. J.	Henry
Northen, C. S.	Fulton
Norvelle, D. F.	Fulton
Oatts, E. W.	Toombs
Ogden, S. F.	Alabama
Olivier, W. L.	Virginia
O'Neill, J. H.	Alabama
O'Shee, P. C.	Louisiana
Owens, C. H.	Mississippi
Pace, C. C.	Dougherty
Pafford, I. M.	Glynn
Palmisano, J.	Troup
*Parke, R.	Mass.
*Parker, W. C.	Chatham
Parkis, D. M.	Tennessee
Parrott, H. L.	Ben Hill
Parsons, P. E.	Bulloch
Pate, J. M.	Pulaski
Patterson, C. D.	Kentucky
Patterson, Jacob W.	Fulton
*Paul, P. S.	Texas
Paulk, E.	Irwin
Peeples, E. E.	Florida
*Perdue, W. E.	Bibb
Persons, J. P.	Spalding
Peterkin, G. A.	Louisiana
Petty, H. A.	Terrell
Phipps, C. A.	Ohio
Pinkston, P.	Dougherty
Pitts, L. G.	Polk
Poole, G. M.	Louisiana
Powell, G. W.	Ben Hill
Power, G. W.	Hart
*Powledge, G. L.	Meriwether
*Pritchard, F. C.	Tennessee
Pryor, Wm. A.	Ben Hill
Pudney, L. E.	Fulton
*Pullen, H. L.	Tennessee
*Putzel, L. Jr.	Tennessee
Rather, C. P.	Alabama
Reese, E. L.	Tennessee
Reeves, H. L.	Tennessee
Reeves, J. L.	Morgan
Register, V. L.	Laurens
Reid, R. W.	Fulton
Reynolds, R. J.	Fulton
Reynolds, W. S.	S. Carolina
Rhodes, G. N.	N. Carolina
*Rich, C. F.	N. Carolina
Richards, C. D.	Fulton
Richards, W. A.	Wilkes
Ripley, A. W.	DeKalb
Roane, R. W.	Fulton
*Robert, H. C., Jr.	Fulton
Roberts, A. B.	DeKalb
Roberts, L. A.	Dodge
Roberts, R. V.	Whitfield
Roberts, W. W.	Fulton
*Robertson, D. D.	Fulton
Robey, C. S.	Effingham
Robins, J. B.	Walton
Rodriguez, S. P.	Mexico
*Rohrer, J. E.	Ben Hill
Rosenau, S.	Florida
Rosser, G. P.	Fulton
Rozear, S. P. Jr.	Florida
Rozier, H. F.	Hancock
Rumble, A. R.	Bibb
Sanford, J. W.	Bibb
Santamaria, I.	Richmond
*Saunders, J. E.	Cuba
Selser, S. G.	Tennessee
Sewell, T. M.	Louisiana
Sharp, C. H.	Fulton
Sharp, J.	DeKalb
Shaw, F. K.	Fulton
Sheffield, G. O.	Fulton
Shellenberger, J. L.	Fulton
Shelton, H. W.	Warren
Shepard, W. T.	Fulton
Shippen, W. H. Jr.	Cobb
Shivers, J. F.	Alabama
Shonesy, C. A.	Fulton
Shrank, H. C. R.	Fulton
Sibley, L.	Fulton
Sickel, W. E.	Chatham
Simmons, D. R.	Decatur
Sims, G. R.	Coffee
Skinner, E. L.	Florida
Sluder, C. T.	N. Carolina
Smith, C. M.	Glynn
Smith, C. W.	Kentucky
Smith, E. R.	Turner
Smith, G. P.	Glynn
Smith, H. F.	
Smith, J. Forman	Alabama
Smith, O. K.	Oglethorpe
Smith, P. R.	Tennessee
Smith, W. B.	Emanuel
*Snyder, S.	Louisiana

NAME	COUNTY OR STATE
Spence, T. D.	Fulton
Spiker, P. P.	Fulton
Stafford, L. G.	Louisiana
Stakemiller, D. C.	Florida
*Stark, O. P.	Arkansas
Staton, J. C.	Fulton
Steil, A.	Florida
Stewart, N. V.	Fulton
Strickland, F.	Stewart
*Stubbs, W. P.	Florida
Summers, C. B.	N. Carolina
Swann, L. H.	DeKalb
Tate, D. M.	Fulton
Taylor, J. H.	Fulton
Taylor, J. L.	Louisiana
Teasley, H. E.	Hart
Thatcher, W. C. Jr.	Tennessee
Thompson, N. C.	Alabama
Thompson, W. D.	Arakansas
Thornton, G. P.	Fulton
Thurmond, J. D.	Coweta
Toler, A. W.	Fulton
Treanor, K.	McIntosh
Tupper, N.	Fulton
Turner, C. J.	Polk
Turner, E. F.	S. Carolina
Turner, M. L.	Virginia
Turner, N.	Bibb
Usry, J. A.	McDuffie
Van Winkle, E. K.	Fulton
Vaughan, Jas. A.	Florida
Vaughan, Jno. O.	Carroll
Vinson, C. E.	Chatham
Voigt, Wm. Jr.	Pierce
Waldrup, Ray	Mississippi
Walker, K. J.	S. Carolina
Wallace, G. L.	Fulton
Waller, C. R.	Pulaski
Walsh, F. O. Jr.	Fulton
Walters, W. T.	Florida
Walton, A. R.	Ware
Ward, A. C.	Lincoln
Watkins, R. O.	Fulton
Watson, R. M.	Virginia
Weaver, D. A.	Bartow
Weigel, H. S. Jr.	Louisiana
Welsh, T. A.	Chatham
Wesley, J. W.	Fulton
Whelchel, L.	Turner
*White, B. F.	Cobb
White, R. E.	Fulton
*Whitfield, J. J.	Pulaski
Whitmire, B. T.	S. Carolina
Whittaker, R. T.	Fulton
Whyte, C. B.	Arkansas
Wikle, E. J.	Fulton
Wilcox, G. E.	Ben Hill
*Williams, H. W.	N. Carolina
Williams, N. H.	Tennessee
Williams, Reuben,	Harris
Williams, R. S.	Tennessee
Williams, W .A.	Fulton
Wingfield, J. D.	Wilkes
Withers, W. S.	Fulton
Wolfe, G. C.	Texas
Womack, G. S.	Fulton
Wooddall, H. P.	Fulton
Woodruff, A. G.	Chatham
Woods, D. E.	Butts
Woolfolk, W. C.	Muscogee
Woolford, F. R.	Arkansas
Worden, E. M.	Virginia
Worke, R. H. Jr.	Tennessee
Wright, R. L.	S. Carolina
*Wynne, G. M.	Florida
Yon, T. H.	Florida
Yon, W. E.	S. Carolina
Young, R. M.	Troup

SPECIALS

SPECIAL T. E. No.1

Baird, J. K.	S. Carolina	Hall, B. F	Louisiana
Baxley, F.	S. Carolina	Haynsworth, K. L.	S. Carolina
Bowles, R. L.	Troup	Henderson, I. H.	S. Carolina
Cates, J. B.	Tennessee	Humphries, J. S.	Fulton
Daniel, E. W.	S. Carolina	Hutchinson, R. S.	Troup
Dean, S. I.	Florida	Jordan, A. B.	Fulton
Fletcher, H. M. Jr.	Butts	Magill, S. A.	Fulton
Gaffney, H. R.	Muscogee	McDonald, H. A.	Barrow
Geitner, J. S.	N. Carolina	McKay, R. A.	Bibb
Greer, A. W.	Spalding	McRae, J. P.	N. Carolina

NAME	COUNTY OR STATE	NAME	COUNTY OR STATE
Murray, S. E.	Spalding	Standard, W. T.	Wilkes
Nanney, Roy	N. Carolina	Tatum, J. B.	Troup
Oates, E. J.	Texas	*Tillery, L.	Muscogee
Orrell, E. D.	N. Carolina	Tucker, S. B.	Taylor
Otto, D. A.	Texas	Watkins, R. Cunningham	Virginia
Roane, S. A.	Fulton	Webster, W. M. Jr.	S. Carolina
Rowland, C. D.	Mississippi	Whelchel C. A.	Hall
*Sabate, J. J.	Mississippi	Whelchel, H.	Turner
Shaw, R. Y.	N. Carolina		
Sherman, E. R.	Glynn		

SPECIAL T. E. No. 2

Amis, T. B.	Coweta	Laney, J. F.	N. Carolina
Barnes, M. D.	Fulton	McClesky, J. M.	Cobb
Berry, M. O.	Polk	McCorkle, J.	Fulton
Cary, C. W.	Hancock	Parks, J. T.	Hancock
Courtenay, M. H.	S. Carolina	Proctor, W. L.	Bibb
Derry, W. T.	Bibb	Spivey, E. H.	Talbot
Doyal, R. L.	Fulton	Taylor, F. H.	Conn.
Harris, S. H.	Carroll	*Tillery, C.	Muscogee
Hay, T. P.	Alabama	*Walker, J. D.	Bleckley
Hinson, W. W.	S. Carolina	Wood, J. W.	S. Carolina
Horsley, R. B.	Troup	Wood, T. H.	S. Carolina
Jernigan, W. M.	Greene		

SPECIAL ARCHITECTURE No. 1

Archer, A. W.	N. Carolina	Manning, F. W.	Cobb
*Cappelmann, E. W.	S. Carolina	Nix, R. E.	Fulton
Clapp, D. B.	Tennessee	Smith, W. H.	
Holsonbach, B. L.	Fulton		

SPECIAL ARCHITECTURE No. 2

Arnold, J. Y.	Elbert	Kennickell, E. M.	Chatham
Constantine, A. E.	Chatham	*Stoney, S. G. Jr.	S. Carolina

SPECIAL UNCLASSIFIED

DuPree, J. T.	Louisiana	Merricks, F. W.	Fulton
Earnest, W. M.	Fulton	Meyers, C. R.	N. Jersey
Godley, J. L.	Florida	Ratterman, G. H.	Tennessee
Grether, J. R.	Fulton	Seward, C. M.	Fulton
Kibler, D. B.	Florida	Underwood, H. C.	New York
Lucas, J. H.	S. Carolina		

SPECIAL MOTOR TRANSPORT

Babcock, H. R.	California	LaFave, J. A.	Mass.
Cohen, Samuel	New York	Lockard, J. H.	Ohio
*Darlington, L. E.	Penn.	Maddox, L. A.	Texas
Gardner, L. W.	Iowa	Marshall, R. M.	Conn.
Headley, W. A.	N. Jersey	McMillin, R. M.	Troup
Heitz, A. T. A.	New York	Wentworth, P. T.	Maine
Hutchinson, W. C.	S. Carolina	Winkle, H. C.	Texas
*LaForge, A. L.	New York		

SUMMARY OF ENROLLMENT

Senior Class	116	College Day Courses	1551
Junior Class	269	Night School of Com.	364
Sophomore Class	468	Total Collegiate	1915
Freshman Class	601	Night School	280
Special Architects	10	Summer School	273
Special Textile	61	Rehabilitation Non-Collegiate	406
Motor Transport	15	Total	2874
Unclassified	10	Less Duplicates	240
Total College Day Courses	1551	Total net enrollment	2634

PROFESSION OR OCCUPATION OF PARENTS OF STUDENTS IN COLLEGIATE DAY COURSES.

Merchants	209	Workmen	29
Farmers	193	Insurance Agents	26
Manufaturers	177	Cotton Merchants	22
Salesmen	102	Ministers	22
Railway & Tel. Emp.	66	Automobile Dealers	16
Physicians	59	Accountants	16
State and City Officers	48	Teachers	13
Engnrs. and Architects	45	Dentists	12
Bankers	42	Newspaper Men	7
Lawyers	38	Miscellaneous	282
Real Estate	38	Not given	58
Contractors	31	Total	1551

GRADUATES BY DEPARTMENTS

Graduates in Mechanical Engineering	447
Graduates in Electrical Engineering	385
Graduates in Textile Engineering	112
Graduates in Civil Engineering	121
Graduates in Engineering Chemistry	46
Graduates in Chemistry	12
Graduates in Architecture	48
Graduates in Commerce	34
Pachelor of Science	5
Total	1210

GENERAL INFORMATION

Historical Sketch

On Nov. 24, 1882, Hon. N. E. Harris, of Macon, afterwards Governor of the State, prepared and introduced in the Georgia Legislature a resolution authorizing the creation of a committee to investigate the advisability of establishing a technical school in Georgia. The committee of ten, appointed, visited the leading engineering institutions of the North, and in the summer session of the Legislature of 1883, presented a report recommending the establishment of such an instutution, accompanied with a bill for that purpose. The measure was overwhelmingly defeated, receiving only sixty-five votes. The people of the State were appealed to; it was the issue in many counties in the election of members to the next Legislature; the State Agricultural Society and other prominent State organizations pressed the matter upon the attention of the people, and finally, in 1885, fathered by Hon. N. E. Harris, a bill was passed appropriating $65,000 to found the school.

Early in January, 1886, Governor McDaniel appointed the first Commission, consisting of Messrs. N. E. Harris, of Bibb; S. M. Inman, of Fulton; O. S. Porter, of Newton; E. R. Hodgson, of Clarke, and Columbus Heard, of Greene. This Commission organized by electing Hon. N. E. Harris, chairman, which position he has occupied from that time to the present. Mr. E. R. Hodgson was made secretary, which position he occupied to the time of his resignation, in 1912; and Mr. S. M. Inman was elected treasurer, and held this position until he resigned on account of his removal from the State, in 1897, at which time he was succeeded by Mr. J. S. Akers, who holds the office at the present time.

By Act of the Legislature, December 9, 1890, two other trustees were added to the Local Board, and on January 7, 1891, Messrs. D. N. Speer and W. B. Miles were duly elected. Mr. D. N. Speer resigned in 1893, and was succeeded by Mr. George Winship, of Atlanta. Mr. S. M. Inman resigned October, 1897, and was succeeded by Mr. George W. Parrott, of Atlanta, who served until June, 1899, and was in turn succeeded by Mr. Walter M. Kelly, of Atlanta. Due to removal from the city, Mr. Kelly resigned March, 1907, and was succeeded by Mr. N. P. Pratt, of Atlanta, who was elected July, 1907. In April, 1911, Col. O. S. Porter resigned, and was succeeded by Mr. Hal G. Nowell, of Monroe, Ga. October 4, 1912, Mr. E. R. Hodgson resigned, and was succeeded by his son, Mr. E. R. Hodgson, Jr., on the same date. Judge Columbus Heard died October 23, 1912, and was succeeded by Mr. George J. Baldwin, of Savannah, who was elected January, 10, 1913. Mr. George Winship resigned October 14, 1914, and was succeeded by Mr. J. S. Akers, who was elected on the same date. Mr. W. B. Miles died March 18, 1918, and was succeeded by Mr. John W. Grant, who was elected April 3, 1918. Due to his removal from the State, Mr. George J. Baldwin resigned in 1919 and was succeeded by Hon, George H. Carswell, of Irwinton, Ga. By an Act of the Legislature of 1919, the Board was authorized to elect two members from the alumni of the institution. The Attorney General having ruled that this act did not permit the election of a non-resident of the State, the act was amended in 1920 and on October 13 of the same year,

Mr. George G. Crawford of Birmingham, and Mr. L. W. Robert, Jr., of Atlanta were elected. Mr. Hal G. Nowell died Feb. 1921, and on April 13, 1921, Mr. F. C. Furlow of New York was elected his successor.

By Act of the Legislature, August 5, 1910, the Chairman of the Board of Trustees of the University of Georgia was authorized to appoint biennially not exceeding three members of his Board, to act, ex-officio, as members of the Board of Trustees of each of the branch colleges of the University. In accordance with the provisions of this Act, the following three members of the University Board are at present members of the Board of Trustees of the Georgia School of Technology: Mr. W. E. Simmons, of Lawrenceville; Hon. Clark Howell, of Atlanta, and Hon Joseph E. Brown, of Marietta.

The Act establishing a technical school in Georgia provided for competitive bids from various sections of the State for the location of the school. The cities of Athens, Atlanta, Macon, Milledgeville and Penfield submitted such bids. That of Atlanta was accepted, and a campus of nearly five acres was purchased on North Avenue from Peters Park Company. The Commission having decided that the campus was too small for the purposes of the school, Mr. Richard Peters, president of the Company, donated four additional adjoining acres. During the summer of 1888, the buildings and part of the equipment being ready, a faculty and president were elected and on October 7, the institution was turned over by the local commission to the Trustees of the University. The Georgia School of Technology was formally opened.

Dr. Isaas S. Hopkins had been called to serve as first president of the new institution, and occupied this position until 1896. These eight years of beginning were difficult ones. There was no general understanding or appreciation of the significance of technical education. As a consequence the school made small progress. During the early morning of April 21, 1891, the school shops were totally destroyed by fire. With the insurance, supplemented by an additional appropriation from the Legislature, the loss was replaced by a building and equipment much superior to the original plant.

During the spring of 1896, Doctor Lyman Hall, a graduate of West Point, and then Professor of Mathematics at the Georgia School of Technology, was elected to succeed Dr. Hopkins, first as chairman of the faculty, and, in June, as president of the institution. The presidency of Dr. Hall, extending from this date until his death, August 16, 1905, was a period of steady expansion. The Knowles Dormitory was erected, and was first occupied by students at the opening of fall session in 1897. The Local Board of Trustees, at its meeting in December, 1896, established the degrees of Electrical Engineering and Civil Engineering.

In December, 1897, an appropriation by the Legislature, which was liberally added to by friends of the institution, made possible the establishment of the Textile Department, and in the fall of 1899, a regular course in Textiles, leading to the Degree of Bachelor of Science in Textile Engineering, was opened to students. The successful creating of this Textile course was largely due to the friendly interest of Mr. Aaron French, of Pittsburg, Pa. He became interested in the school during the summer of 1897, and co-operated liberally in enabling the school to meet the conditions imposed by the Legislature in making its appropriation for the course in Textiles. In commemoration of his generosity, the Textile Department is known as the A. French Textile School.

The creating of the Departments of Electrical, Civil, and Textile Engineering was the beginning of an era of rapid and steady expansion—in buildings and equipment, in size of faculty and student body, in curriculum and standard of work, and in prestige; the Legislature, also, began gradually to become aware of the needs of the school and of its value as an upbuilding power in the industrial life of the State.

In December, 1900, the Legislature appropriated $10,000 for an Electrical building and $6,000 for additional textile equipment, with the proviso that these amounts should not be available until the friends of the school should furnish $25,000 in cash donations, a condition that was promptly met. In June, 1902, the General Educational Board offered to give the school $5,000 for equipment and $2,500 two successive years for maintenance, provided friends of the school would donate $10,000 additional. These friends responded by giving $12,910 in cash, as listed in the 1903-04 catalogue. In 1903, the will of Mr. James Swann provided that the school should receive $10,000 in cash upon the settlement of his estate. This amount, properly supplemented, was spent in the purchase of nearly two acres of land adjoining the campus and in the erection on a portion thereof of a president's residence. Mr. Swann had previously, in 1900, given the school $21,500 for the erection of the Janie Swann Dormitory, a memorial to his wife.

The next considerable addition to the school plant was the Lyman Hall Laboratory of Chemistry. In June, 1904, the Legislature appropriated $10,000 for the erection of a chemical laboratory, provided friends of the school would give an equal amount. The conditional amount was raised by the mid-summer of 1905, and in October of the following year the building, completed and fully equipped, was occupied by the Department of Chemistry. Dr. Hall had been enabled to meet the provision of the Legislature only with heroic sacrifice and at an enormous cost of his health; the amount was completed only a few weeks before his death. It was in connection with memorial exercises in his honor that the corner-stone of the Laboratory was laid with imposing ceremony November 25, 1905. It is eminently fitting that his name is perpetuated in the structure. Dr. Hall's connection with the Georgia School of Technology was in every way a notable one. During the nine years of his presidency, he succeeded, largely through his own efficiency and devotion, in raising the school from an insignificant and struggling existence to a position of proud equality with the great engineering institutions of the country.

As successor to Dr. Hall, the Board of Trustees elected Dr. K. G. Matheson, professor of English at the Georgia School of Technology, to the chairmanship of the faculty and installed him as president the following year, 1906. The period since this date has been characterized by a continuous growth. Not merely has the school experienced an enlargement of its material equipment and its patronage, but its name has yearly become more widely and more favorably known, and its resources have been applied continually toward a more extensive satisfying of the needs of its State and its community.

Meanwhile, the Legislature had shown a desire to meet the growing needs of the institution. The first appropriation, made December 26, 1888, was $18,000. The second appropriation, made December 26, 1890, was $22,500. The maintenance fund was continued at this rate until 1898, when it was cut $2,500, making $20,000, while $10,000 was added for two years for the maintenance of the Textile Department,

making $30,000 per annum in all. In 1896, the Legislature had made an appropriation of $10,000 for dormitories for each of the two following years. In 1900, the appropriation for maintenance was raised to $40,000; in 1902, to $45,000; in 1906, to $55,000; in 1907 to $60,000; in 1909, to $70,000, in 1911, to $75,000; in 1912, to $80,000; in 1913 to $90,000; in 1915 to $100,000, and in 1919, to $125,000. The city of Atlanta has shown a like increasing interest in the needs of the school by increasing the annual appropriations for the general maintenance fund and for the Night School.

The Class of 1903 was the first to erect a memorial to itself on the campus. A beautiful marble drinking fountain was placed on the campus in March, 1911, and was formally presented to the institution at the following commencement. On the same occasion, the Electrical Seniors of the Class of 1911 presented the school with handsome electric light standards, placed in front of the entrance of the Electrical Building. The Electrical Seniors of the Class of 1912 continued the tradition created by their immediate predecessors by erecting memorial electric light standards in front of the entrance of the Library. The classes of 1914 and 1915 erected the handsome light standards and concrete steps in front of the main building.

Considerable additions of land have also been made to the eleven acres that the school possessed in 1905. In August, 1906, the Legislature appropriated $17,500 for the purpose of enlarging the campus. Four acres each of the present campus and fronting on North Avenue were purchased for $16,000, and the remaining $1,500, increased by friends to $3,500, was invested in a lot fronting 180 feet on Cherry street and 150 feet on Kimball street. Purchase has also been made of a lot fronting 156 feet on North Avenue and 150 feet on Fowler street, and of two additional lots on Cherry street. In December, 1911, the school purchased from the Peters Land Company nearly three acres of land adjoining the northern limits of the campus. With characteristic generosity, the Peters Land Company presented to the school an intervening street, 50 feet wide and 500 feet long. The latest addition to the school property, January 29, 1913, is about four acres of land north of and adjoining the present athletic field. The County Commissioners of Fulton County agreed to grade both fields; and the work, now completed, represents an outlay of approximately $30,000, had it been let to private contract. In April, 1913, Mr. John W. Grant, of Atlanta, gave $15,000 for the equipment of the field, and the Board of Trustees, in appreciation of the gift, named the field "The Hugh Inman Grant Field," in memory of Mr. Grant's deceased son. This dual athletic field is unequalled in the South. In 1915, through the further liberality of Mr. Grant and the Board of Trustees, the concrete grandstand was completed at an additional cost of $20,000, making it the largest and trustees accepted the conditions and the building was secured.

The most important additions to the school equipment, however, have been the several handsome buildings that have been added to the plant since 1905.

On March 12, 1906, Mr. Andrew Carnegie donated $20,000 for a Library building, on condition that the school appropriate a minimum of $2,000 annually for the support of the Library. The Board of trustees accepted the conditions and the building was secur ed.

In November, 1909, through the initiative of the Women's Federation of Clubs, Mrs. Joseph B. Whitehead gave $5,000 towards the

erection of a Hospital, to be called the Joseph Brown Whitehead Memorial Hospital, in memory of her husband. This donation was increased by various gifts in cash and materials; and the Hospital, costing about $15,000, was erected during the summer of 1910 and the succeeding session.

In February, 1910, Mr. John D. Rockefeller gave $50,000 toward the erection of a Y. M. C. A. building, provided the school would raise $25,000. This pro rata was secured; and the erection of the building was begun in May, 1911, and was completed in the summer of 1912.

In August, 1910, the Legislature appropriated $35,000 to be applied toward the erection of a new Shop Building, on condition that friends of the school raise $15,000. Through the agency of the Atlanta Chamber of Commerce, considerably more than this amount—$22,000 in all—was subscribed in November, 1910; the fund was secured in February, 1911, the erection of the building was begun and three of its five units completed. In August, 1919, the Legislature appropriated $100,000 for the remaining two units, one of which was completed in 1920 and is now in use.

On probating the will of the late Mr. Julius L. Brown, who died September 4, 1910, it was found that he left two-thirds of his valuable estate to the Georgia School of Technology. The school has come into possession of its proportionate share of the estate, and according to the terms of the will, the income from the property will be used to equip and maintain the Departments of Chemistry and Electrical Engineering.

One of the most important movements in the history of the school was inaugurated in the Greater Tech Campaign in the summer of 1914. Prior to this time certain large manufacturers of machinery had been induced, through the efforts of friends of the school, to donate $100,000 worth of power machinery, conditioned on the erection by the school of a suitable building. As a result of the campaign, the Greater Tech Fund was raised, largely by the subscriptions of business men of Atlanta, and the new Power Station building is completed, and the machinery is being installed.

This building is the beginning of a plan to establish complete equipment for all kinds of engineering research work in the school, and it will open unlimited opportunities for the graduates of the school in original and scientific investigation as well as in the regular field of engineering work.

One of the most significant illustrations of the growth of the school appears in the record of yearly attendance. Keeping pace with the advance in Legislative favor and in material equipment, the school shows a steady increase in the number of the student body. Nor have there been merely numerical additions; the character of the attendance has improved year by year, the class standing has risen, the curriculum has been broadened and elevated, and the finished product has increased in number.

The following list, showing the number of students registered at the school from the opening of the school to the close of session of 1920-21, furnishes an interesting record of these facts:

1888-89	130	1894-95	125	1900-01	463	
1889-90	145	1895-96	154	1901-02	431	
1890-91	169	1896-97	180	1902-03	483	
1891-92	205	1897-98	267	1903-04	510	
1892-93	138	1898-99	332	1904-05	511	
1893-94	121	1899-1900	459	1905-06	501	
	908		1,517	1906-07	562	
						3,461

	Regular Students	Specials	Night School	Summer School	Duplicate	Total
1907-08	562	...	135	...	...	697
1908-09	565	...	72	44	31	650
1909-10	593	...	153	54	45	755
1910-11	667	...	94	141	84	818
1911-12	689	...	154	105	90	818
1912-13	660	...	132	113	100	805
1913-14	712	44	243	142	139	1,002
1914-15	724	86	181	110	95	1,006
1915-16	724	...	380	100	87	1,117
1916-17	843	...	273	106	93	1,129
1917-18	945	...	334	112	100	1,291
1918-19	1365	...	468	100	80	1,853
1919-20	1684	259	261	208	203	2,209
1920-21	1915	406	280	273	240	2,634
Total						16,824

From this it will be seen that thousands of young men have enjoyed the benefits of the institution. While many of these did not graduate, in almost every instance these young men will be found engaged in industrial pursuits, using the lessons which they learned at the school, putting into operation in their work the skill derived from contact with the great machines forming part of the equipment of the institution, and adding to the industrial values of the State and of the nation wherever they are found.

Purpose

The chief aim and purpose of the Georgia School of Technology is to give to its students such a combination of general, scientific, and professional training as will fit them for lives of higher usefulness and success, especially as engineers, in the industrial development of the State of Georgia and of the South.

Degrees Conferred.

The degrees conferred are as follows: Bachelor of Science in Mechanical Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Civil Engineering, Bachelor of Science in Textile Engineering, Bachelor of Science in Engineering Chemistry, Bachelor of Science in Architecture, and Bachelor of Science in Commerce, Bachelor of Commercial Science, and Bachelor of Science in Industrial Education.

Buildings.

The School occupies a desirable site in a campus of some twenty-five acres, lying at the junction of North Avenue and Cherry Street, easily accessible by street car lines on Marietta, West Peachtree and Luckie Streets. The Academic building is a handsome edifice of brick, trimmed with granite and terra-cotta and roofed with slate. It has one hundred and thirty feet front, is one hundred and twenty feet deep, and four stories above the basement story. It contains ample accommodations in halls, offices, apparatus-rooms, recitation and lecture-rooms.

The workshops are also of brick, the main shop building being two hundred and fifty feet long by eighty feet wide, and two stories, with large basement. It is designed with reference to its use, and affords space for the machine and wood-shops. The smith-shop and foundry are located in new shop building which has recently been erected, and which ranks among the best in the country in appearance, utility and equipment.

The Textile building was completed in 1898, and is 150 by 70 feet, with three floors for the accomodation of machinery, class rooms, etc. It was designed by Lockwood, Greene & Co., of Boston, and fulfills every requirement of a modern cotton mill.

The Dormitory buildings consist of the Janie Austell Swann Dormitory, containing fifty rooms for student; the Knowles Dormitory, containing thirty-six rooms for student, and dining room; and two smaller dormitories of eight rooms each.

The Electrical building is three stories in height, 90 by 82 feet in plan, and contains the Experimental Laboratory, the Electrical Laboratory, and class rooms.

The Lyman Hall Laboratory of Chemistry is two stories in height, with basement. Each floor has an approximate area of 5,600 square feet. The lecture-rooms, stock-rooms, library, offices, gas analysis laboratory, photographic and spectroscope rooms occupy the front, and the laboratories the rear wing.

The Carnegie Library building has been fully equipped with the most modern library appliances. The building is constructed of pressed brick with ornate limestone trimmings, and is a model of beauty and convenience. In the basement are binding, storage and janitor's rooms, with assembly and club-rooms to be completed later. The first story contains the handsome reading-rooms, librarian's office, stack seminar rooms. The building is seventy-five and one-half feet front by fifty-eight feet deep.

The Joseph Brown Whitehead Memorial Hospital, erected during the summer of 1910 and the following session, is a completely equipped modern hospital, devoted to the needs of the student body. It is erected on the east side of Cherry Street, and covers approximately 4,000 square feet, with a capacity of twenty-seven patients. On the first floor is the office and private laboratory of the School Physician, a room for minor surgical operations, sterilizing room, suite of three rooms for the resident nurse, a kitchen, besides a ward to accommodate ten beds, with necessary service and clothes rooms, diet kitchen and solarium. Private rooms for seven patients are located on the second floor, where are also a nurse's room, ward for ten beds, solarium and service room. The building is constructed of brick and marble, is heated with steam from the central heating plant of the school, and is equipped with a special system of ventilation.

Young Men's Christian Association Building.

In 1910 Mr. John D. Rockefeller made a very generous proposition to all colleges of the South, in which he agreed to give to any institution under specified conditions, two dollars for every one it would raise locally for the erection of a Y. M. C. A. Building. The Georgia School of Technology was among the very first to take advantage of this offer. The sum of $25,000 was raised among the friends of the School in the City of Atlanta and parts of the State, and immediately Mr. Rockefeller added $50,000 to it. The school appropriated a most desirable lot, and now we have one of the handsomest student buildings in the country.

Everything that makes for the betterment of the man physically, socially, mentally and spiritually, and everything that can add to the pleasure and comfort of the student has found, as far as practicable, a home in the building. It contains a large and comfortably furnished lobby and reading rooms, offices for the Secretary and assistants, auditorium, rooms for various clubs and societies, athletic headquarters, 12 dormitory rooms, game room, grill room, barber shop, student post office, bowling alleys, locker room, and shower baths.

Power Station and Engineering Laboratory.

General Description.

The new Power Station building is completed, a part of the equipment installed, and the remainder will be installed as fast as funds become available. The value of this Station and equipment including the accompanying campus improvement will be about $300,000. It has been made possible through the generous co-operation of both Northern and Southern manufacturers, the alumni, our students, and friends of the School in Georgia. Considered both from a practical and an educational standpoint, it will give to the Georgia School of Technology advantages which are enjoyed by few institutions anywhere.

This plant will supply the entire school with light, power, heat, refrigeration, compressed air, and high-pressure water service for fire and laboratory purposes. It will supply the engineering laboratories and shops with alternating and direct current, both high and low tension; steam, high and low pressure, both saturated and superheated. The Station and equipment have been designed not only for practical use, but also as a power and research laboratory, and for the purpose of instruction in engineering. The new plant will not only provide many new facilities for instruction and research, but will also materially expand the usefulness and opportunities of all the other departments of the school.

As the Power Plant is designed along the lines of modern central station practice, the school will be unusually well equipped for training engineers who will be thoroughly fitted to undertake large power and industrial plant problems, using steam, oil, gas, or hydro-electric power. The large amount of undeveloped water power in the South, and our vast resources in coal, oil, and natural gas, make it vitally important that engineers receive thorough instruction in a power laboratory of this kind. Students entering Tech will receive their finishing work in engineering in this new Power Laboratory, and it will also afford excellent opportunities for post-graduate work and original investigations by the faculty and students.

Equipment of the New Station.

The major portion of the power equipment has been selected, and consists of the most modern power plant machinery, combining also many features for research and instruction purposes. An appropriation of $30,000 was made by the State Legislature in 1918 for the installation of this machinery, and a considerable part of it has been placed in the building.

New Research Bureau.

The erection of the new Power Laboratory marks the beginning of a new era in the history of the School. It makes possible the establishing of a State Research Bureau at Georgia Tech which has long been needed in the manufacturing and industrial development of Georgia. Not only the new Power Laboratory equipment, but the major portion of the facilities of the School, will in various ways become available for industrial research and testing. This new system will be developed as rapidly as funds become available, and by means of a general State Campaign. By suitable publicity, the manufacturers, engineers and officials throughout the State will be kept informed of this progressive work. The special aim of the Research Bureau will be to afford opportunities for the study and development of the natural resources of Georgia together with by-products, new processes and machinery.

Bureau of Standards.

It is proposed in connection with the new Power Laboratory and Research Bureau to establish a Bureau of Standards for the benefit of the Government of the State and also that of cities, towns and counties. All materials, relating to sanitation, sewerage, ventilation, heating, highways, paving, materials, chemicals, machinery and other supplies and equipment used by the above mentioned Government may be purchased and used according to well established standards, and as fast as new materials and equipment are developed, their true value can be ascertained by means of this State Bureau of Standards. This Department will also have represented in it various United States Government Standards.

Equipment of Laboratories and Shops.

The Mechanical, Electrical, Chemical, Experimental and Physical laboratories have been fitted up with reference to practical work, and such additions will be made from time to time as may be required for experimental research. The apparatus and appliance are of the newest and best forms, and will be increased as occasion may demand.

The workshops have been equipped with machinery and tools from the best makers, and of the latest pattern. In pursuance of the fundamental idea of giving the student access to the best machinery, and experimental knowledge of the best methods of mechanical work, the Trustees have put the Mechanical Departments on a footing with the most improved and complete shops in the country, and scarcely any process requiring fine material and accurate workmanship is beyond its capacity.

The Textile building has an excellent equipment of cotton manufacturing machinery, listed elsewhere.

Valuable additions have recently been made to the equipment of the Departments of Architecture, Electrical Engineering, Experimental Engineering and Physics.

DEPARTMENTS

DEPARTMENT OF ARCHITECTURE.

PROFESSORS SMITH AND GAILEY, AND MR. ROYER.

General Statement.

The Course in Architecture was opened to the students in the autumn of 1908 as one of the full professional courses in the Georgia School of Technology. The regular course extends over four years, leading to the degree of Bachelor of Science in Architecture.

It is the purpose of the Department to offer the necessary training in Design, Construction, and the allied subjects that will eventually fit the student for the practice of Architecture, and will also enable him upon graduation to be of immediate value as a draughtsman.

With this end in view, the course of study combines with the strictly professional work, the essentials of a liberal education, aiming to give the student as broad a foundation as possible for his future work. The number and scope of the subjects to be covered during the course make it necessary that the student start his architectural work at the beginning of the Freshman year.

Architecture is regarded primarily as a Fine Art and the aesthetic side of the profession is emphasized throughout the course. Design, consequently, with the subjects closely allied to it, is given the most important place in the curriculum.

The work in Design is started after the courses in Descriptive Geometry, Shades and Shadows, Perspective and the Elements of Architecture have given the student a good foundation. During the Sophomore year simple problems in Design are taken, involving the use of the Orders and other elements and training in the sense of correct form and proportion. In the Junior and Senior years plan problems are given and the entire composition of buildings is studied. A series of lectures on the Elements and Theory of Architecture accompanies this work and frequent sketch problems are given to develop rapidity of thought and presentation. During the second term of the Senior year, Thesis Designs, are presented, the subjects for which are selected by the students with the approval of the head of the Department.

Whenever possible, the problems given out by the Society of Beaux Arts Architects are taken. These designs are judged in New York in competition with the work of other Schools of Architecture through the country. Problems that are not sent to New York for judgment are passed upon by a jury of practicing architects in Atlanta, and "Mentions" are awarded to the best designs.

In the study of the History of Architecture, the student is encouraged to regard the buildings not merely as remarkable monuments of great artistic value, but also as links in the chain of architectural development, and as being truly representative of the civilization and epoch to which they belong. The social and political aspects of the various periods and their effects upon the historic styles are studied, as well as the architectural characteristics of the building.

Draughtsmanship receives constant attention throughout the four years, not only in the courses in pure Drawing and Water Color, but also in the work in Design and Ornament. The importance of the study of Drawing can scarcely be over-estimated, it being the architect's principal medium of expression.

The nature and use of Building materials are studied, as well as the principles involved in General Construction and Sanitation, while the studies of Graphic Statics and Structural Mechanics familiarize the student with these branches of Architectural Engineering. Inspection trips are made to buildings in course of erection and to certain manufacturing plants.

Throughout the work the student is urged to make adequate and intelligent use of the Library, a comprehensive knowledge of the best work of all periods being essential to success.

Equipment.

The Department of Architecture occupies the entire third floor of the Mechanical Building, there being two large Draughting Rooms, a Free Hand Studio, Lecture Room, Office, etc. All of these rooms are well furnished and have excellent light, both natural and artificial.

The School possesses a good working Library of Architectural books and periodicals, to which additions are constantly being made, as well as collections of photographs, drawings, stereopticon slides and plaster casts.

Scholarship.

The Georgia Chapter of the American Institute of Architects has established a self-perpetuating scholarship open to students in the two upper classes who may be in need of financial assistance. The beneficiary refunds the money after graduation in payments of small monthly notes without interest.

Two-Year Special Course.

A Special Course of two years' duration is also offered to qualified men, who must have had at least one year's experience in the office of a practicing architect. In addition to this, fifteen units are required for entrance. Exceptions to this may be made by the head of the department with approval of the faculty in the cases of mature candidates who have had at least two years' experience in the office of a practicing architect. In this course Architectural studies only are pursued. Upon completion of the required work a Certificate of Proficiency is given.

The Regular Courses in Architecture

FRESHMAN YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Arch.	1	Architectural Drawing		9	9.
Chem.	1	Inorganic Chemistry	3		7.5
Chem.	5	Chemical Laboratory		2	2.
Draw.	17	Applied Tech Drawing	2	3	8.
Eng.	11	Rhetoric	3		7.5
Eng.	15	Theme Writing	1		1.
Math.	11	Algebra	3		6.
Math.	15	Trigonometry	3		7.5
Mil.	1	Military Instruction		5	5.
		Total..	15	19	53.5

Second Term

Arch.	3a	Shades and Shadows	1	6	7.
Arch.	7a	Elements of Architecture	1	6	8.
Arch.	8	Pencil Drawing		2	2.
Chem.	2	Inorganic Chemistry	3		7.5
Chem.	6	Chemical Laboratory		2	2.
Eng.	12	Rhetoric	3		7.5
Eng.	16	Theme Writing	1		1.
Math.	16	Slide Rule		1	1.
Math.	18	Analytic Geometry	5		12.5
Mil.	2	Military Instruction		5	5.
		Total..	14	22	53.5

SOPHOMORE YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Arch.	5	Perspective	1	3	4.
Arch.	11	Architectural Design		12	12.
Arch.	15	History of Architecture, Ancient	2		5.
Arch	19	Charcoal Drawing		2	2.
Eng.	21	American Literature	3		7.5
Math.	21	Analytic Geometry	2		5.
Math.	25	Calculus	3		7.5
Phys.	5	Physics	3		7.5
Mil.	3	Military Instruction		5	5.
		Total..	14	22	55.5

Second Term

Arch.	12	Architectural Design		12	16.
Arch.	16	History of Architecture, Mediaeval	2		5.
Arch.	20	Charcoal Drawing		2	2.
Eng.	24	Political Economy	3		7.
Math.	28	Calculus	5		12.5
Phys.	6	Physics	3		7.5
Mil.	4	Military Instruction		5	5.
		Total..	13	19	55.5

JUNIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Arch. 23	Architectural Design		14	17.
Arch. 27	History of Architecture, Modern	2		5.
Arch. 31	Building Construction, Masonry	1		3.5
Arch. 35	Sanitation of Buildings	1		2.5
Arch. 39	Cast Drawing*		2	2.
Arch. 43	Pen and Ink Drawing*		2	2.
C. E. 31	Graphic Statics	2	3	8.
Eng. 31	English Literature	3		7.5
M. L. 7	French	3		7.5
	Total..	12	21	55.

Second Term

Arch. 24	Architectural Design		16	21.
Arch. 52	Building Construction, Masonry	1		3.5
Arch. 40	Cast Drawing*		2	2.
Arch. 44	Pen and Ink Drawing*		2	2.
Arch. 48	Historic Ornament		4	4.
Arch. 52	Water Color Drawing		3	3.
Eng. 32	English Literature	3		7.5
Mech. 41a	Mechanics of Materials	2		5.
M. L. 8	French	3		7.5
	Total..	9	27	55.5

*Electives for Mil. 5 and 6.

SENIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Arch. 55	Architectural Design*		18	22.
Arch. 59	Archaeology		4	5.
Arch. 63	Building Construction, Carpentry	1		3.5
Arch. 67	Professional Practice	1		2.5
Arch. 71	History of Art	1		2.5
Arch. 75	Antique Drawing		2	2.
Arch. 79	Pen and Pencil Rendering		2	2.
Arch. 83	Water Color Drawing		3	3.
M. L. 9	French	3		7.5
	Total..	6	29	50.

Second Term

Arch. 56	Architectural Design*		20	28.
Arch. 64	Building Construction, Carpentry	1		3.5
Arch. 68	Professional Practice	1		2.5
Arch. 72	History of Art	1		2.5
Arch. 76	Antique Drawing		2	2.
Arch. 80	Pen and Pencil Rendering		2	2.
Arch. 84	Water Color Rendering		3	3.
M. L. 10	French	3		7.5
	Total..	6	27	51.

*Arch. 55, 2 hours, and Arch. 56, 3 hours are electives for Mil. 6 and 7.

Special Course in Architecture

FIRST YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Arch. 3	Shades and Shadows	1	6	7.
Arch. 7	Elements of Architecture	1	8	9.
Arch. 11	Architectural Design		6	12.
Arch. 15	History of Architecture, Ancient	2		5.
Arch. 19	Charcoal Drawing		2	2.
Arch. 31	Building Construction, Masonry	1		3.5
Arch. 35	Sanitation of Buildings	1		2.5
Arch. 43	Pen and Ink Drawing		2	2.
Mil. 1	Military Instruction		5	5.
	Total..	6	29	48.

Second Term

Arch 5a	Perspective	1	3	4.
Arch. 12	Architectural Design		16	25.
Arch. 16	History of Architecture, Mediaeval	2		5.
Arch. 20	Charcoal Drawing		2	2.
Arch. 32	Building Construction, Masonry	1		3.5
Arch. 39a	Cast Drawing		2	2.
Arch. 44	Pen and Ink Drawing		2	2.
Arch. 52	Water Color Drawing		3	3.
Mil. 2	Military Instruction		5	5.
	Total..	4	33	51.5

SECOND YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Arch. 23	Architectural Design		14	17.
Arch. 27	History of Architecture, Modern	2		5.
Arch. 40	Cast Drawing		2	2.
Arch. 59	Archaeology		4	5.
Arch. 63	Building Construction, Carpentry	1		3.5
Arch. 67	Professional Practice	1		2.5
Arch. 71	History of Art	1		2.5
Arch. 79	Pen and Pencil Rendering		2	2.
Arch. 83	Water Color Drawing		3	3.
C. E. 31	Graphic Statics	2	3	8.
Mil. 3	Military Instruction		5	5.
	Total..	7	33	55.5

Second Term

Arch. 24	Architectural Design		16	25.
Arch. 48	Historic Ornament		4	4.
Arch. 64	Building Construction, Carpentry	1		3.5
Arch. 68	Professional Practice	1		2.5
Arch. 72	History of Art	1		2.5
Arch. 75a	Antique Drawing		2	2.
Arch. 76	Antique Drawing		2	2.
Arch. 80	Pen and Pencil Rendering		2	2.
Arch. 84	Water Color Rendering		3	5.
Mil. 4	Military Instruction		5	5.
	Total..	3	34	51.5

Courses of Instruction.

Arch. 1. Architectural Drawing.

Mr. Royer.

Freshman, first term, nine hours.

An introductory course in free-hand and mechanical lettering, instrumental drawing of architectural forms, and India ink wash-drawing.

Arch. 3 and 3a. Shades and Shadows.

Mr. Royer.

Arch. 3. First Year Special, first term, seven hours.

Arch. 3a. Freshman, second term, seven hours.

This course consists of lectures and draughting room work in the theory and methods of determining the shades and shadows on architectural forms.

Text: **McGoodwin,** "Architectural Shades and Shadows."

Arch. 5 and 5a. Perspective.

Professor Gailey.

Arch. 5. Sophomore, first term, 4 hours.

Arch. 5a. First Year Special, second term, 4 hours.

This course consists of lectures and draughting room work in the theory of Perspective, the use of Vanishing Points, the Perspective Plan, method, etc.

Text: **Lubschez,** "Perspective."

Arch. 7 and 7a. Elements of Architecture.

Professor Smith and Mr. Royer.

Arch. 7. First Year Special, first term, nine hours.

Arch. 7a. Freshman, second term, seven hours.

Illustrated lectures on the simple elements of Architectural Design, such as walls, doors, cornices and mouldings. This is followed by a careful consideration of the classical orders and the principles involved in their use. Stress is laid on their character and general proportions rather than upon mathematical rules for drawing them. Carefully rendered drawings of the orders and other simple Elements of Design are made in the draughting room.

Text: **Ware,** "American-Vignola." Part I.

Arch. 8. Pencil Drawing.

Mr. Royer.

Freshman, second term, two hours.

Elementary work in free-hand pencil drawing from blocks and simple forms, studying the mass and proportions.

Arch. 11. Architectural Design.

Mr. Royer.

Prerequisites, Arch. 3, 5 and 7.

Sophomore, first term, twelve hours.

First Year Special, first term, six hours.

Simple problems in composition and design involving the Orders, are studied, especial attention being given to the design and drawing of details at a large scale. Individual criticism is given as the work progresses, and at the completion of the problems, the rendered drawings are judged by a jury of practicing architects.

Arch. 12. Architectural Design.

Professor Gailey.

Prerequisite, Arch. 11.

Sophomore, second term, twelve hours.

First Year Special, second term, sixteen hours.

A continuation of Arch. 11.

Arch. 15. History of Architecture, Ancient.

Professor Smith.

Prerequisite, Arch. 7.

Sophomore and First Year Special, first term, two hours.

Two lectures a week are given with the aid of the stereopticon. Architectural development is studied from the dawn of civilization to the fall of Rome. Research work is done in the Library by each student and written quizzes are held.

Text: **Kimball and Edgell,** "History of Architecture."

Arch. 16. History of Architecture, Mediaeval.

Professor Smith.

Prerequisite, Arch. 15.

Sophomore and First Year Special, second term, two hours.

A continuation of Arch. 15, in which the various mediaeval styles of European architecture are studied. Individual reports are prepared by the students on special topics.

Text: **Kimball and Edgell.**

Arch. 19. Charcoal Drawing.

Mr. Royer.

Prerequisite, Arch. 8.

Sophomore and First Year Special, first term, two hours.

Charcoal work from simple plaster casts. Monthly tests without criticism are given.

Arch. 20. Charcoal Drawing.

Mr. Royer.

Prerequisite, Arch. 19.

Sophomore and First Year Special, second term, two hours.

A continuation of Arch. 19.

Arch 23. Architectural Design.

Professor Gailey.

Prerequisite, Arch. 12
Junior and Second Year Special, second term, sixteen hours.
This course succeeds Arch. 12. Problems in planning are taken up and buildings are designed in plan, section and elevation. Carefully rendered drawings are made, and short sketch problems are given at stated periods.

Arch. 24. Architectural Design.

Professor Smith.

Prerequisite, Arch. 23.
Junior and second year special, second term, sixteen hours.
A continuation of Arch. 23.

Arch. 27. History of Architecture, Modern.

Professor Smith.

Prerequisite, Arch. 16.
Junior and Second Year Special, first term, two hours.
This concluding course in the subject is devoted to a consideration of Renaissance and Modern Architecture, beginning with the work of Brunelleschi.
Text: **Kimball and Edgell, "History of Architecture."**

Arch. 31. Building Construction. Masonry.

Professor Smith.

Junior and First Year Special, first term, one hour.
Recitations and quizzes in the materials and processes of masonry construction as applied to buildings. Foundations, footings, brick work, stone masonry, systems of reinforced concrete, etc., are studied.
Text: **Kidder, "Building Construction and Superintendence, Masonry."**

Arch. 32. Building Construction. Masonry.

Professor Smith.

Prerequisite, Arch. 31.
Junior and First Year Special, second term, one hour.
A continuation of Arch. 31.

Arch. 35 Sanitation of Buildings.

Professor Smith.

Prerequisite, Arch. 12.
Junior and Second Year Special, first term, one hour.
A study of the principles of Heating, Ventilating and Plumbing. Lectures and recitations.
Text: **Allen, "Notes on Heating and Ventilating."**

Arch. 39 and 39a. Cast Drawing.

Mr. Royer.

Prerequisite, Arch. 20.
Junior, First Term and First Year Special, second term, two hours.
Drawing from casts of architectural features and sculpture.

Arch. 40. Cast Drawing.

Professor Gailey and Mr. Royer.

Prerequisite, Arch. 39.
Junior and Second Year Special, second term, two hours.
A continuation of Arch. 39.

Arch. 43. Pen and Ink Drawing.

Professor Gailey.

Prerequisite, Arch. 20.
Junior and First Year Special, first term, two hours.
The drawing and rendering in pen and ink of architectural subjects. Stress is laid upon the composition of the sketches as well as its presentation. Drawings by recognized masters are studied and copied to familiarize the student with good technique and style.
Text: **Maginnis, "Pen Drawing."**

Arch. 44 Pen and Ink Drawing.

Professor Gailey.

Prerequisite, Arch. 43.
Junior and First Year Special, second term, two hours.
A continuation of Arch. 43, in which the student works from photographs.

Arch. 48 Historic Ornament.

Professor Gailey.

Prerequisite, Arch. 39.
Junior and Second Year Special, second term, four hours.
A course in the design of Architectural ornament in various historic styles. The best examples from the period are studied and used as inspiration for the work.

Arch. 52. Water Color Drawing.

Professor Gailey.

Prerequisite, Arch. 39.
Junior and First Year Special, second term, three hours.
Wash drawings in Sepia are made from still-life models.

Arch. 55. Architectural Design.

Professor Smith.

Prerequisite, Arch. 24.
Senior, first term, eighteen hours.
In the Senior Year, the designing of larger compositions is begun. Group plans are studied and more complicated problems are taken up.

Arch. 56. Architectural Design.

Professor Smith.

Prerequisite, Arch. 55.
Senior, second term, twenty hours.
A combination of Arch. 55. During the latter part of the term the Thesis designs for the Bachelor's degree are made. Programs requiring original work must be selected.

Arch. 59. Archaeology.

Professor Smith.

Perequisite, Arch. 24 and 27.
Senior and Second Year Special, first term, four hours.
One or more Design problems in some of the more important historic styles are given. This course offers opportunity to obtain more exact knowledge of certain styles, and supplements the work in Architectural History, upon which it is largely dependent.

Arch. 63. Building Construction. Carpentry.

Professor Smith.

Senior and Second Year Special, first term, one hour.
Recitations and quizzes on Carpentry Construction as applied to buildings. The construction of the frame house, floors, partitions, roofs, interior finish, etc., are studied.
Text: **Kidder**, "Building Construction and Superintendence, Carpentry."

Arch. 64. Building Construction. Carpentry.

Professor Smith.

Prerequisite, Arch. 63.
Senior and Second Year Special, second term, one hour.
A continuation of Arch. 63.

Arch. 67. Professional Practice.

Professor Smith.

Senior and Second Year Special, first term, one hour.
A couse of lectures and discussions on professional ethics, competitions, contracts, specifications, theory of design and the specific requirements of certain classes of buildings such as School Houses, Libraries, Hospitals, and Residences. Papers are prepared and read by the students and discussed in class.

Arch. 68. Professional Practice.

Professor Smith.

Prerequisite, Arch. 67.
Senior and Second Term Special, second term, one hour.
A continuation of Arch. 67.

Arch. 71. History of Art.

Professor Gailey.

Prerequisite, Arch. 16.
Senior and Second Year Special, first term, one hour.
Recognizing the often intimate connection of Architecture with the allied Arts of Sculpture and Painting, the history of these subjects is taken up briefly in a course of lectures and recitations, assisted by the stereopticon and by photographs. Egyptian, Assyrian, Greek and Roman work is studied.

Arch. 72. History of Art.

Professor Gailey.

Prerequisite, Arch. 71.
Senior and Second Year Special, second term, one hour.
A continuation of Arch. 71, devoting especial attention to the sculpture and painting of the Italian Renaissance.

Arch. 75 and 75a. Antique Drawing.

Professor Gailey.

Prerequisite, Arch. 40.
Arch. 75. Senior, first term, two hours.
Arch. 75a. Second Year Special, second term, two hours.
Drawing from the cast of antique sculpture and the full length figure.

Arch. 76. Antique Drawing.

Professor Gailey.

Prerequisite, Arch. 75.
Senior and Second Year Special, second term, two hours.
A continuation of Arch. 75, including also drawing from life.

Arch 79. Pen and Pencil Rendering.

Professor Gailey.

Prerequisite, Arch 44.
Senior and Second Year Special, first term, two hours.
A continuation of Arch. 44, in which sketches are made from nature and more elaborate renderings are made.
Text. **Hays**, "Architectural Rendering in Pen and Ink."

Arch. 80. Pen and Pencil Rendering.

Professor Gailey.

Prerequisite, Arch 79.
Senior and Second Year Special, second term, two hours.
A continuation of Arch. 79.

Arch. 83. Water Color Drawing.

Professor Gailey.

Prerequisite, Arch. 52.
Senior and Second Year Special, first term, three hours.
Water Color drawings and sketches are made from photographs, still-life objects, architectural details, and nature.

Arch. 84 Water Color Rendering.

Professor Gailey.

Prerequisite, Arch. 83.
Senior and Second Year Special, second term, three hours.
A continuation of Arch. 83, in which the rendering of Architectural Perspectives in water color, is studied.

DEPARTMENT OF AUTOMOBILE ENGINEERING.

The courses in this department are taught by members of the departments of Experimental and Electrical Engineering.

General Statement.

This course is intended to fit a young man to enter the automobile industry. The courses are so arranged that the Mechanical Engineering Course and the Automobile Engineering Course are identical up to the end of the Junior year. In the Senior year Automobile Engineering subjects have been substituted for the Steam Engineering subjects in the Mechanical Engineering Course. To be successful in this field the student should be well grounded in the fundamentals of internal combustion engine theory, the thermodynamics of fuels, metallurgy of steel and the steel alloys, and design of the automobile. This course leads to the Degree of Bachelor of Science in Mechanical Engineering.

This course is open only to students who have completed three years of the regular M. E. course.

SENIOR YEAR

First Term

Abbrev	Subject	Hrs. Per W'k Class	Lab.	Equv.
A. E. 81	Internal Combustion Engines	3		7.5
A. E. 85	Ignition, Starting & Lighting Systems	1	2	4.5
A. E. 87	Automobile Design		6	6.
E. E. 3	Electrical Engineering Lab.		3	4.
E. E. 5	Applied Electricity	3		7.5
Ex. E. 71	Fuels Laboratory		4	4.
M. E. 51	Shop Methods	2		5.
M. E. 61	Mechanics of Materials	2		5.
M. E. 63	Engineering Problems	2		5.
M. L. 3	German			
M. L. 9	French — One required	3		7.5
M. L. 15	Spanish			
	Total..	16	15	56.

Second Term

A. E. 82	Thermodynamics of the Internal Combustion Engine	3		7.5
A. E. 86	Starting and Lighting Systems and Carburetion	1	3	5.5
A. E. 88	Automobile Design		6	6.
A. E. 92	Seminar	2		5.
Ex. E. 84	Engine Laboratory		4	4.
Ex. E. 90	Automobile Laboratory		4	4.
M. E. 76	Graphical Statics	2		5.
Met. 56	Metallurgy & Heat Treatment of Steels	2		5.
Met. 58	Metallurgy Laboratory		4	4.
M. L. 4	German			
M. L. 10	French — One required	3		7.5
M. L. 16	Spanish			
	Total..	13	21	53.5

Courses of Instruction.

A. E. 81. Internal Combustion Engines.

Professor King.

This course involves a very thorough study of the internal combustion engine with particular reference to the automobile engine.
Three lecture hours per week.

A. E. 82. Thermodynamics of the Internal Combustion Engine.

Professor King.

A presentation of the fundamental principles of thermodynamics with special applications to the automobile motor, combustion of hydrocarbon fuels, etc.
Three lecture hours per week.

A. E. 85. Ignition, Starting and Lighting Systems.

Professor Fitzgerald.

This course takes up a thorough study of magnetos and other ignition apparatus, and starting and lighting systems. Laboratory work includes the study of design and the testing of various makes of these accessories.
One lecture and one two-hour laboratory period per week.

A. E. 86. Starting and Lighting Systems and Carburetion.

Professors Fitzgerald and Howell.

A continuation of Course No. 85 with the addition of a study of fuels and their carburetion for use in the internal combustion engine.
One lecture and 1 two-hour laboratory period per week.

A. E. 87. Automobile Design.

Professors Howell, Mason and McEver.

A study is made of existing automobile designs. From the results of this study the student designs an automobile engine and chassis carrying the work as far into detail as time will permit. The first part of the term is devoted to recitations and lectures.
Two three-hour laboratory periods per week.

A. E. 88. Automobile Design.

Professors Howell, Mason and McEver.

A continuation of course No. 87.
Two three-hour laboratory periods per week.

A. E. 92. Seminar.

Professor King.

A course consisting of the reading of current technical magazines bearing on the subject of Automobile Engineering and a discussion of their contents in the class room.
Two lecture periods per week.

DEPARTMENT OF CHEMISTRY

PROFESSORS EMERSON, BOGGS, DANIEL, WROTH, AND SHAW
MESSRS. AYCOCK, HILL, TAYLOR AND UPDIKE

General Statement

The course offered by this department is intended, in the first place, to give the student a broad foundation in General and Theoretical Chemistry, so that new problems met in his future work may be solved intelligently; and, in the second place, to give him special training in those branches of Chemistry which have been most generally applied industrially, so that he may be immediately useful.

Equipment

The Lyman Hall Laboratory of Chemistry, thus named in honor of Dr. Lyman Hall, second President of the institution, was completed in 1906. It is a T-shaped building of brick, with limestone trimmings, two stories high, with a basement. Each floor has an approximate area of 5,600 square feet. Lecture rooms, reading room, stock rooms, offices, combustion room, and dark rooms occupy the front, and laboratories the rear wing. The basement is fitted up for offices and lecture rooms. The large lecture room on the first floor will accommodate about one hundred students, and there are two smaller rooms for the use of advanced classes. Especial care has been given to the lighting and ventilation of the laboratories. All of them receive light from three sides, and for the removal of noxious fumes, they are amply provided with hoods, each of which has a seperate flue leading to a tight wooden fume-box, located just under the roof. This box communicates with the outer air. The natural draught thus created serves the desired purpose admirably.

Each student is provided with gas, water, sink, and a private locker allowing at least four feet of desk space. The entire first floor of the rear wing is occupied by the laboratory for elementary Chemistry, which will accommodate about 500 students. The upper floor of this wing is for the laboratories of qualitative and quantitative analysis, and a small private laboratory for the instructors. Seventy-five students can be accommodated in the first named and forty-five in the second. The hydrogen sulphide gas used is generated in a separate room. The students are served with materials and apparatus from a stock-room on each floor. The amply lighted balance room, which is shut off from the laboratory fumes by means of double doors, is equipped with nine high-grade balances, one of which is mounted on a pier of masonry free from contact with the building, thus eliminating vibrations. On this floor is located a reading room provided with some of the leading journals and reference works devoted to Chemistry.

Course Leading to the Degree Bachelor of Science in Engineering Chemistry

The graduate in this course will be prepared to pursue the subject either on its manufacturing or analytical side. With respect to his fitness to take up the work in chemical manufacturing, the course offers exceptional opportunities. The work in Mechanical Engineering,

embracing considerable shop and laboratory practice, elementary mechanics, and the steam engine, will enable him to understand machinery, superintend the running of it, and take charge of various mechanical operations. The course in Drawing will enable him to understand mechanical drawings and express his ideas by means of them. The course in Electricity will enable him to understand electrical appliances and to superintend industrial operations carried on by means of this power. His knowledge of Chemistry will equip him to determine the relative values of the raw matrials offered by dealers, and to conduct intelligently operations based on chemical principles, detect imperfections in them and suggest improvements. The work of the course being mainly chemical, the graduate will be prepared to undertake analytical processes of almost any kind, and should be valuable in the laboratory in many ways.

Tabulation of Subjects Leading to the Degree Bachelor of Science in Engineering Chemistry

FRESHMAN YEAR

Uniform for all Engineering Courses.

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem. 1	Inorganic Chemistry	3		7.5
Chem. 5	Chemical Laboratory		2	2.
Dr. 15	Applied Technical Drawing	2	3	3.
Eng. 11	Composition and Rhetoric	3		7.5
Eng. 15	Theme Writing and Speaking	1		1.
Math. 11	College Algebra	3		6.
Math. 15	Trigonometry	3		7.5
M. E. 3	Wood Shop		3	3.
M. E. 5	Smith Shop			
or				
M. E. 7	Foundry		3	3.
Mil. 2	Military Instruction		5	5.
	Total..	15	16	50.5

Second Term

Chem. 2	Inorganic Chemistry	3		7.5
Chem. 6	Chemical Laboratory		2	2.
Dr. 16	Applied Technical Drawing	2	3	3.
Eng. 12	Composition and Rhetoric	3		7.5
Eng. 16	Theme Writing and Speaking	1		1.
Math. 16	Slide Rule		1	1.
Math. 18	Analytic Geometry	5		12.5
M. E. 4	Wood Shop		3	3.
M. E. 5	Smith Shop			
or				
M. E. 7	Foundry		3	3.
Mil. 2	Military Instruction		5	5.
	Total..	14	17	50.5

SOPHOMORE YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem. 13	Qualitative Analysis		7	7.5
Dr. 27	Machine Drawing		3	3.
Eng. 21	American Literature	3		7.5
Met. 21	Ferrous Metallurgy	2		5.
Math. 21	Analytic Geometry	2		5.
Math. 25	Calculus	3		7.5
Phys. 9	Physics	4		10.
Mil. 3	Military Instruction		5	5.
	Total..	14	15	50.5

Second Term

Chem. 14	Qualitative Analysis		7	7.5
Chem. 16	Quantitative Analysis	2	6	9.
Eng. 24	Political Economy	3		7.5
Math. 28	Calculus	5		12.5
Phys. 10	Physics	4		10.
Phys. 16	Physics Laboratory		3	4.
Mil. 4	Military Instruction		5	5.
	Total..	14	21	55.5

JUNIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem. 17	Quantitative Analysis		10	10.
Chem. 21	Organic Chemistry	3		7.5
Chem. 23	Organic Laboratory		3	3.
Chem. 29	Advanced Inorganic Chemistry *	2		5.
Chem. 37	Industrial Chemistry			
Eng. 31	English Literature (Elec. for Mil. 5)	3		7.5
M. L. 1	German			
M. L. 7	French } One required	3		7.5
M. L. 13	Spanish			
Phys. 11	Physics	3		7.5
Phys. 17	Physics Laboratory		3	4.
	Total..	14	16	52.

Second Term

Chem. 18	Quantitative Analysis (3 hrs. Elec. for Mil. 6)		10	10.
Chem. 22	Inorganic Chemistry	3		7.5
Chem. 24	Organic Laboratory		3	3.
Chem. 30	Advanced Inorganic Chemistry *	2		5.
Chem. 38	Industrial Chemistry			
Dr. 28	Machine Drawing (Elec. for Mil. 6)		3	3.
Eng. 32	English Literature	3		7.5
Exp. E. 76	Power Plants	2		5.
Mech. 41a	Mechanics of Materials	2		5.
M. L. 2	German			
M. L. 8	French } One required	3		7.5
M. L. 14	Spanish			
	Total..	15	16	53.5

*Given alternate years.

SENIOR YEAR

First Term

Abbrev.	Subject		Hrs. Per W'k Class	Lab.	Equv.
Chem. 19	Quantitative Analysis		2	12	17.
Chem. 29	Advanced Inorganic Chemistry	*	2		
Chem. 37	Industrial Chemistry				5.
Chem. 33	Physical Chemistry		2		
Exp. E. 77	Heat Engines and Thermodynamics		3		5.
Exp. E. 73	Elementary Steam Laboratory			3	7.5
Mech. 31	Applied Mechanics		3		4.
M. L. 3	German				7.5
M. L. 9	French	One required	3		
M. L. 15	Spanish				7.5
		Total..	15	15	53.5

Second Term

Chem. 30	Advanced Inorganic Chemistry	*	2		
Chem. 38	Industrial Chemistry				5.
Chem. 34	Physical Chemistry		3		
Chem. 36	Physico-Chemical Measurements			3	7.5
Chem. 42	Thesis (Elec. for Mil. 7.)			8	3.
E. E. 2	Applied Electricity		3		8.
E. E. 3a	Electrical Engineering Laboratory			3	7.5
Exp. E. 78	Advanced Heat Engines and Thermodynamics		2		4.
Exp. E. 74	Fuel and Gas Engine Laboratory			3	5.
M. L. 4	German				4.
M. L. 10	French	One required	3		
M. L. 16	Spanish	(Elec. for Mil. 8.)			7.5
		Total..	13	17	51.5

Courses of Instruction

Chem. 1. Elementary Inorganic Chemistry.

Professors Emerson, Boggs, Daniel, Wroth and Shaw,
Messrs. Aycock, Hill, Taylor and Updike.

Freshman, First Term, three hours.

This course is required of all Freshmen and is designed to acquaint the student with some of the principles of Chemistry, and also familiarize him with the sources, methods of preparation, properties and uses of a number of important commercial substances. In order to accomplish these ends, considerable time is spent in explanatory and experimental lectures, in which the significance of the theories is dwelt upon, and their applications in a practical way pointed out. Thus the harmony between theory and practice is established. The modern theories of solution, and the "Mass Law," are emphasized. The solution of numerous numerical problems is required.

Text: McPherson and Henderson's "Elementary Study of Chemistry." The ground covered during this term includes the first sixteen chapters, with about a month of review.

Chem. 2. Elementary Inorganic Chemistry.

Professors Emerson, Boggs, Daniel, Wroth and Shaw,
Messrs. Aycock, Hill, Taylor and Updike.

Prerequisite, Chem. 1.
Freshman, second term, three hours.
A continuation of Chem. 1, covering the remainder of text, with about a month of review.

Chem. 5. Chemical Laboratory.

Professors Shaw, Emerson, Boggs, Daniel, Wroth,
Messrs. Aycock, Hill, Taylor and Updike.

Freshman, first term, one two-hour period.
The Experiment-Observation-Deduction Method is here applied as far as the time permits. The keeping of accurate records of observations is required, as upon these the students must draw, in answering the oral questions following each experiment. These quizzes insure an understanding of the subject and its connection with the instruction given in Chem. 1. While the ground covered is limited, the thoroughness attained by requiring every student to recite on each experiment has amply justified the adoption of this method.
Text: Selected exercises.

Chem. 6 Chemical Laboratory.

Professors Shaw, Emerson, Boggs, Daniel and Wroth,
Messrs. Aycock, Hill, Taylor and Updike.

Prerequisite, Chem. 1 and 5.
Freshman, second term, one two-hour period.
A continuation of Chem. 5, with special attention to the metals.

***Chem. 9. Qualitative Analysis.**

Professors Wroth and Emerson, Messrs. Hill and Updike.

Prerequisites, Chem. 1, 2, 5, 6.
Sophomore, first term, three hours laboratory, one hour lecture.
This course is required of students in Civil and Textile Engineering. The course is similar to Chem. 13, and is conducted in a like manner. Groups 1, 2 and 3 of the metals are completed during this term.
Text: Baskerville & Curtman's "Qualitative Analysis."

Chem. 10. Qualitative Analysis.

Professors Wroth and Emerson, Messrs. Hill and Updike.

Prerequisites, Chem. 9.
Sophomore, second term, time same as Chem. 9.
A continuation of Chem. 9, completing the study of the metallic ions. It also includes a study of a few of the more common acids, and the analysis of several unknown mixtures and minerals.

*Chemistry 9 and 10 given to Civil Engineering students, first term. Textile Engineering students, second term.

Chem. 13. Qualitative Analysis.

Professor Boggs and Mr. Updike.

Prerequisites, Chem. 1, 2, 5 and 6.

Sophomore, first term, six hours laboratory, one hour lecture.

This course includes laboratory work, lectures and quizzes, and is required of all students specializing in Chemistry. The lectures deal with the "Mass Law," complex ions, solubility product, and other theoretical matters bearing on the work, as well as the methods of procedure, and the precautions necessary to secure good results. Frequent quizzes are given upon these lectures and upon the laboratory work.

Text: **Baskerville & Curtman's** "Qualitative Analysis."

References: Such texts as **Treadwell, Bottger, and Talbot and Blanchard.** The work of this term includes the separation of the metallic elements. Enough mixtures of known and unknown composition are given to ground the students thoroughly in the methods used.

Chem. 14. Qualitative Analysis.

Professor Boggs and Mr. Hill.

Prerequisite, Chem. 13.

Sophomore, second Term, six hours laboratory, one hour lecture.

This course is a continuation of Chem. 13, and is conducted in a similar manner. The reactions and identifications of the more common anions are studied, and a number of unknown mixtures and minerals are given for complete analysis.

Chem. 16. Quantitative Analysis.

Professor Daniel and Mr. Taylor.

Prerequisites, Chem. 13, Chem. 14, completed or parallel.

Sophomore, second term, Engineering Chemists, six hours laboratory, two hours lecture.

This course is an introduction to the general methods of gravimetric analysis. The work consists chiefly in laboratory practice and includes a thorough drill in stoichiometry. Conferences and oral quizzes are given on each exercise, and supplement the laboratory work. The standard of accuracy is raised as the student becomes more proficient; duplicate analyses are required throughout, thus inducing the student to test his own work as to accuracy and reliability. The required work includes the following determinations: iron in Mohr's Salt, aluminum in alum, magnesium in Epsom Salts, calcium and magnesium in limestone, sulphur in pyrite, silver in a dime, tin and lead in solder, phosphoric acid in phosphate rock, silicon and sulphur in iron.

Texts: **Mahin,** "Quantitative Analysis."

Chem. 17. Quantitative Analysis.

Professor Daniel and Mr. Taylor.

Prerequisite, Chem. 16.

Junior, first term, Engineering Chemists, one hour lecture and nine hours laboratory.

This course is a continuation of Chem. 16. As in all other quantitative work, duplicate analyses are required. Conferences, quizzes and problems are continued. The required work includes the following or its equivalent; the calibration of several pieces of volumetric apparatus; the preparation of standard permanganate, dichromate, iodine, and thiosulfate solutions and their use in determining iron manganese, and copper in ores, phosphorus and sulphur in iron and arsenic insecticides; the determination of silica and the alkalis in an insoluble silicate, manganese in iron and phosphoric acid and potash in a fertilizer; the complete analysis of brass; and the proximate analysis of coal.

Texts: **Mahin,** "Quantitative Analysis" and **Lord,** "Metallurgical Analysis."

Chem. 18. Quantitative Analysis.

Professor Daniel and Mr. Taylor.

Prerequisite, Chem. 17.

Junior, second term, Engineering Chemists, one hour lecture and nine hours laboratory.

This course is a continuation of Chem. 17. The laboratory work includes the following exercises: preparation and use of a fifth normal acid and base, the analysis of fertilizer, carbon, hydrogen, and nitrogen in coal and the analysis of boiler water, and the complete qualitative and quantitative analysis of an unknown sample.

Chem. 19.Quantitative Analysis.

Professor Daniel and Mr. Taylor.

Prerequisite, Chem. 18.

Senior, first term, Engineering Chemists, twelve hours laboratory, and two hours recitation.

The theory and methods of quantitative analysis will be studied in the classroom.

In the laboratory the work will be individual. Students showing especial fitness and interest will be assigned special topics for experimental investigation. The other members of the class will be given routine work in analysis.

Chem. 21. Organic Chemistry.

Professor Wroth.

Prerequisites, Chem. 1, 2, 5 and 6.
Parallel, Chem. 23.

Junior, first term, E. C. and T. E., three hours.

The ground covered in this course includes the paraffin hydrocarbons and their derivatives, mixed compounds derived from paraffins, and the carbonhydrates.

Text: **Cohen's** "Theoretical Organic Chemistry."

Chem. 22. Organic Chemistry.

Professor Wroth.

Prerequisites, Chem. 21 and 23.
Parallel, Chem. 24.

Junior, second term, E. C. and T. E., three hours.

It includes the mixed compounds containing nitrogen, phosphorus, arsenic and sulphur, the purine groups and the cyclic hydrocarbons and their derivatives.
Text: As for Chem. 21.

Chem. 23. Organic Laboratory.

Professor Wroth and Mr. Aycock.

Prerequisites, as for Chem. 21.
Junior, first term, E. C. and T. E., three hours.
In this course the student becomes acquainted with the apparatus used in organic work, and with such operations as fractional distillation, saponification, steam distillation, and the determination of melting and boiling points. Fifteen or sixteen typical substances, such as ether, chloroform and iodoform, are prepared.
Text: Cohen's "Practical Organic Chemistry."

Chem. 24. Organic Laboratory.

Professor Wroth and Mr. Updike.

Junior, second term, E. C. and T. E., three hours.
This course is a continuation of Chem. 23. The student carries out such processes as nitration, sulphonation and diazotization, and prepares fifteen or sixteen compounds of typical kinds.
Text: As for Chem. 23.

Chem. 29 and 30. Advanced Inorganic Chemistry.

Professor Boggs.

Prerequisites, Chem. 1, 2, 5 and 6.
Junior and Senior, first and second terms, alternate years, two hours.
This course consists in systematic study of the metals and non-metals, based on Mendeleeff's classification, and includes the chemistry of some of the rarer elements. While the course is largely descriptive, considerable time is devoted to modern theories.
Text: Byers' "Inorganic Chemistry."

Chem. 33. Physical Chemistry.

Professor Emerson.

Prerequisites, Chem, 1, 2, 5, 6, and Phys. 9, 10, 11.
Senior, first term, two hours.
This subject is given to Seniors. It includes a study of the modern theories of structure of atom and molecule, the physical states of matter, and solution.
Text: Getman's "Outlines of Theoretical Chemistry."

Chem. 34. Physical Chemistry.

Professor Emerson.

Prerequisite, Chem. 33.
Senior, second term, three hours.

A continuation of Chem. 33. Thermochemistry, Chemical Dynamics and Equilibrium, and Electrochemistry are the divisions studied. Some applications of physical-chemical data to commercial problems, particularly those of Electrochemistry, are discussed in the latter part of the course.
Text: Same as for Chem. 33.

Chem. 36. Physico—Chemical Measurements.

Professor Wroth.

Prerequisites, Chem. 33: Chem. 34, parallel.
Seniors, second term, three hours.
The student will determine molecular weights by the freezing and boiling point methods. Dissociation will be determined by the freezing point, boiling point and conductivity methods.
Text: Jone's "The Freezing Point Boiling Point and Conductivity Methods."

Chem. 37. Industrial Chemistry.

Professor Daniel.

Prerequisite or parallel, Chem. 21, 22.
Junior and Senior, first term, alternate years, two hours.
Attention is given to the general operations common to many industries, such as crushing, grinding, lixiviation, filtration, evaporation, crystallization, and the details of the various types of apparatus for carrying on these processes. The most important manufacturing industries, such as the production of alkali, sulphuric acid, fertilizers, glass pigments, cement, oils, fats, soaps, and glycerine, as well as paper and wood distillation are considered in detail. Weekly reports are submitted by members of the class reviewing journal articles pertaining to industrial chemical processes. Monthly and term papers are assigned to each student in which is discussed in some detail a particular process or the utilization of a special material.
Text: Thorp, "Outlines of Industrial Chemistry."

Chem. 38. Industrial Chemistry.

Professor Daniel.

Prerequisite or parallel, Chem. 21, 22, 37.
Junior and Senior, second term, alternate years, two hours.
This course is a continuation of Chem. 37. Other industrial processes are studied and discussed and the reports and papers are continued.
Text: Thorp, "Outlines of Industrial Chemistry." Partington, "The Alkali Industry."

Chem. 42. Thesis.

Prerequisites, all courses below the Senior Year.
Senior, second term.
During the Senior year, the student prepares a thesis requiring original work. The subject for investigation is usually selected by one of the instructors in the department, who also supervises the work.

DEPARTMENT OF CIVIL ENGINEERING

PROFESSORS BRANCH, SNOW, AND SMITH, MR. HOMMON, MR. SANFORD, AND MR. LUCAS.

General Statement.

The instruction in the Department of Civil Engineering is by recitation, lecture, drawing room and laboratory work, and field practice, made to conform as nearly as possible to the general routine of work in current engineering practice and still remain general in its scope.

The young graduate in Civil Engineering should have a broad education based upon Mathematics, Mechanics, Chemistry and Physics, the fundamental sciences of Engineering. He is expected to be expert only to the extent that he be a good surveyor, a neat draftsman and an accurate and systematic computer. These are the agencies through which his knowledge of the sciences is applied, and his success in any one of the specialties of the profession will depend largely upon his ability to make this practical application.

His general training should be such as to enable him to express his thoughts clearly and forcibly in good, concise English. The study of English is continued through the first three years, and a two-year course in one modern language is required. From the beginning the student is taught thoroughness in all office, laboratory, and field work; and, placed in the proper atmosphere, he is led by recitations, lectures and the use of current engineering literature to discriminate between methods, while the importance of efficiency and results is held constantly before his mind.

The course is so outlined as to fit the student to be of immediate value in practically all of the subordinate positions of the profession and to bring him to a point where he may be able to continue his studies professionally and develop in any particular field which he may choose. Special attention is given to Railroad Engineering and the design of structures in steel and concrete.

The demand for better highways has broadened the field of Municipal or Highway Engineering until it has assumed such proportions that the Highway Engineer has become a paramount public official, with a broad experience in business methods and a thorough training in Civil Engineering. His knowledge of modern road materials must be certain, necessitating a special preparation in Geology, Mineralogy and Chemistry. The Highway Engineering subjects are given special attention, and ample study of modern methods of highway construction and maintenance is provided for throughout the Senior year.

There is a great demand on the part of cities for men trained in the handling of water and sewage purification plants, as well as general municipal work. The preservation of the health of communities is constantly calling for more intense specialization in that branch of civil engineering known as Sanitary Engineering, and to meet this need Georgia Tech has added a well equipped laboratory for the study of purification methods and bacterial analysis in supplying communities with pure air and water and for disposing of municipal wastes.

Second Term

Abbrev.	Subject		Hrs. Per W'k Class	Lab.	Equv.
C. E. 35	Engineering and Water Supply		3		7.5
C. E. 36	Engineering Economics		2		5.
C. E. 38	Sanitary Engineering			6	6.
C. E. 46	Highway Laboratory			3	3.
Eng. 32	English Literature (Elec. for Mil. 6)		3		7.5
Ex. E. 57	Materials Laboratory			3	3.
Geol. 10	General Geology		3		7.5
Mech. 44	Mechanics of Materials		3		7.5
M. L. 2	German				
M. L. 8	French	One required	3		7.5
M. L. 13	Spanish				
		Total..	17	12	54.5

SENIOR YEAR

First Term

Abbrev.	Subject		Hrs. Per W'k Class	Lab.	Equv.
C. E. 51	Sanitary Engineering		2		5.0
C. E. 53	Framed Structures		3		7.5
C. E. 53b	Truss Analysis			6	6.
C. E. 55	Reinforced Concrete		1	3	5.5
C. E. 57	Highway Engineering		2		5.0
C. E. 57a	Highway Laboratory			3	3.
C. E 61	Contracts & Specifications (Elec. for Mil. 7)		2		5.
Ex. E. 73	Steam Laboratory			3	3.
Ex. E. 77	Heat Engines		3		7.5
M. L. 3	German				
M. L. 9	French	One required	3		7.5
M. L. 15	Spanish				
		Total..	16	15	55.

Second Term

C. E. 54	Framed Structures		3		7.5
C. E. 54b	Structural Detailing			6	6.
C. E. 56	Concrete Structures		2	6	11.
C. E. 58	Highway Engineering		3		7.5
E. E. 2	Applied Electricity		3		7.5
E. E. 3a	Electrical Engineering Laboratory			3	4.
M. L. 4	German				
M. L. 10	French	One required (Elec. for Mil. 8)	3		7.5
M. L. 16	Spanish				
		Total..	14	15	51.

Civil Engineering

C. E. 21 and 21a. Plane Surveying.

Professor Smith, Mr. Sanford.

Prerequisites, Math. 11 and 15

Sophomore E. E. and M. E., first or second term, one hour lecture and three hours practice.

The construction, care, and adjustment of instruments commonly used in surveying; their use in traversing, land surveying, and differential and profile leveling; computation of areas, parting off land and the reduction and plotting of field notes.

Special Highway Course

A three day's course in advanced highway engineering is given during the last week in January. This work is offered for the benefit of practicing engineers and special information will be sent on request.

Equipment

The aim of the Department is to keep up the equipment to meet the needs of the classes, to add such instruments as are required, and to replace the worn-out models by newer ones, rather than to acquire a large and not fully needed equipment. This process has been worked out so completely that our instruments are all new and of the latest models.

The Course in Civil Engineering

FRESHMAN YEAR

See Page 54

SOPHOMORE YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem. 9-10	Quantitative Analysis	2	6	9.0
C. E. 23	Plane, Topographic and City Surveying	1	6	8.5
Eng. 21	American Literature	3		7.5
Math. 21	Analytic Geometry	2		5.
Math. 25	Calculus	3		7.5
Phys. 9	Physics	4		10.
Mil. 3	Military Instruction		5	5.
	Total..	15	17	52.5

Second Term

C. E. 24	Road and Railroad Surveying	2	3	8.0
Eng. 24	Political Economy	3		7.5
Met. 21	Metallurgy	2		5.0
Math. 26	Calculus	5		12.5
M. E. 11b	Machine Shop		3	3.
Phys. 10	Physics	4		10.
Phys. 16	Physics Laboratory		3	4.
Mil. 4	Military Instruction		5	5.
	Total..	16	14	55.0

JUNIOR YEAR

First Term

C. E. 33	Hydraulics	3		7.5
C. E. 45	Highway Engineering	1		2.5
Eng. 31	English Literature	3		7.5
Ex. E. 41	Hydraulic Laboratory		3	3.
Math. 35	Differential Equations (Elec. for Mil. 5)	2		5.
Mech. 33	Applied Mechanics	3		7.5
M. L. 1	German			
M. L. 7	French } One required	3		7.5
M. L. 13	Spanish			
Phys. 11	Physics	2		7.5
Phys. 17	Physics Laboratory		3	4.
	Total..	17	6	52..0

A traverse enclosing about thirty acres is run usually in a semi-developed section of the city, the details tied in and a plot made by each student.

Text: **Raymond's** "Plane Surveying."

C. E. 23. Plane, Topographic and City Surveying and Mapping.

Professor Smith, Mr. Sanford.

Prerequisite, Math. 11, 15.

Sophomore C. E., first term, one hour recitation and six hours practice.

The construction, care, and adjustment of instruments commonly used in surveying; their use in traversing, land surveying, and differential and profile leveling; computation of areas, parting off land and the reduction and plotting of field notes.

Theory of the Stadia and the Plane Table and their application in topographic surveying; city and mine surveying, and the U. S. Government system of laying out public lands; the elements of Geodetic surveying, with the adjustments of the measured and calculated data by the method of Least Squares; the general system of filing and recording deeds in the State of Georgia; plotting, finishing and filing maps; conventional topographic signs and symbols in ink and water color.

A topographic survey is made of a section of the city—usually a park—selected so as to offer as great diversion as possible and to exemplify all of the various methods of horizontal and vertical control and to afford practice in sketching contours, water lining, etc. The field notes are plotted up and a complete map of the section made by each member of the class.

Text: **Breed and Hosmer's** "Principles and Practice of Surveying." Part I.

C. E. 24. Road and Railroad Surveying.

Professor Smith, Mr. Sanford.

Prerequisite, C. E. 23.

Sophomore, C. E., second term, two hours recitation and three hours practice.

Reconnaisance and preliminary surveys; simple, compound, and reverse curves; the American Railway Spiral, with a discussion of various other forms of easement curves; right of way description; location, earth-work computations, haul and the Mass Diagram.

Problems so designed as to illustrate principles, as well as involve individual thinking in their solution, are given throughout the course. Those involving curves and best adapted for the purpose, are "run in" in the field. Checks on all computations and field work are required. Practice is also obtained in cross sectioning and setting slope-stakes.

Text: **Allen's** "Railroad Curves and Earthwork, with Tables."

C. E. 31. Graphical Analysis of Roof Trusses.

Professor Smith.

Junior and Special Arch., first term, three hours, lectures or drawing.

A course in the design of simple roof trusses, including the application of the force and equilibrium polygons and the Maxwell diagrams in the determination of stresses due to dead load, wind and snow loads, etc. The design of a roof truss, wood and steel is given in alternate years.

Text: "Design of Simple Roof-Trusses in Wood and Steel," Howe.

C. E. 33 and 33a. Hydraulics.

Professor Branch, Snow, Dunn.

Prerequisites, Phys. 9, 10, 13 and 14, Math. 26.

C. E. 33, Junior C. E., and Senior E. E., first term, three lectures with problems.

C. E. 33a, Junior M. E., second term, three lectures with problems.

The study of the principles of laws which govern and control the behavior of liquids at rest or in motion. It includes the hydrostatics of water pressure as applied to simple structures and machines; the hydrokinetics of the flow, discharge, and measurement of water together with applications in the design of canals, conduits, pipe lines, etc.; and the hydrodynamics of the use of water in the generation and transmission of power.

Text: Merriman's "Treatise on Hydraulics."

C. E. 34. Masonry Laboratory.

Juniors in Industrial Education, second term, three hours.

This course will consist of practical laboratory study of mortars and mortar mixture, concrete, and simple operations in plastering, and brick and stone masonry. Juniors and Seniors in Industrial Education may elect additional advanced work in masonry work. Not open to engineering students.

C. E. 35. Sewerage and Water Supply.

Professor Branch.

Prerequisite, C. E. 33.

Junior C. E., second term, three lecture hours.

A study of the theory of sewerage systems, their construction and maintenance. Sewer out-falls, and methods of disposal and treatment. Dilution, precipitation, irrigation, natural, and artificial filter, filtration processes, contact beds, septic tanks and contract and sprinkling filters.

Text: Folwell's "Sewerage" and Folwell's "Water Supply," and lectures.

C. E. 36. Engineering Economics.

Professor Snow.

Prerequisite, C. E. 24.

Junior C. E., second term , two lecture hours.

This course is intended to give the student a foundation for solving the problems in economic selection. It deals with Interest, Annuities, Depreciation, Sinking Funds, Salvage, Economics of Repairs and Renewals, the selection of the best machine for a given purpose, Yearly Costs of Service, Operation and Maintenance.

C. E. 38. Sanitary Engineering.

Mr. Hommon and Mr. Sanford.

Prerequisite, Chem. 10.

Junior C. E., Second Term, six hours laboratory.

A Laboratory Course in General Bacteriology and taking up for study the bacteria that are most commonly found in sewerage, water and milk.

There are several sewage treatment works and water purification Plants within the immediate vicinity of the school and these will be visited as often as possible for practical demonstrations.

C. E. 45. Highway Engineering.

Professor Snow.

Prerequisites, C. E. 24.

Parallel, Phys. 11, 17.

Junior C. E., first term, one lecture per week.

This course is intended to familiarize the student with the materials used in highway construction, and prepare him for the work of the laboratory course of C. E. 46. The terminology of Highway Engineering is also discussed so that the student may become familiar with its terms and definitions.

C. E. 46. Highway Laboratory.

Mr. Lucas.

Prerequisites, C. E. 24, Phys. 11, 17.

Junior C. E., second term, three hours in Laboratory.

This course is intended to teach the student how to test Highway and Paving Materials, including cement, sand, gravel, slag, rock, etc., for the purpose of deciding whether they are suitable for road use.

C. E. 51. Sanitary Engineering.

Mr. Hommon.

Prerequisite, C. E. 38.

Senior C. E., first term, two hours lecture.

Sewerage Treatment and Water purification with the resume of the most recent work being done along this line; the underlying principles of sewerage treatment; a discussion of the different types of sewerage treatment devices, and the importance of careful and intelligent supervision of sewerage treatment and water works.

C. E. 52. Theory of Structures.

Professor Branch and Professor Smith.

Prerequisites, Mech. 33 and 44.

Senior E. E., second term, three recitations per week.

A course in determination of stress in frames, principally roofs and bridges, for static and moving loads. The design of beams and girders will close the course.

Text: Spofford's "Theory of S tructures."

C. E. 53. Framed Structures.

Professor Branch.

Prerequisites, Mech. 33 and 44.
Parallel, C. E. 53b.
Senior C. E., first term, three lecture hours.
A course in which is grouped the analytical and graphical determinations of stresses in framed structures. The subjects studied are girders, roof and bridge trusses of various types, wood and steel trestles, towers, tanks, etc. The work includes the use of uniform and concentrated loads, snow and wind loads, and moving loads with their impact contribution to the stresses, maximum and minimum stresses, with their requirements for reversals and counters. Each student computes the stresses from given loadings for a roof truss, plate girder, and a Pratt truss, which are used in C. E. 54b.
Text: Johnson's "Modern Framed Structures."

C. E. 53b. Truss Analysis.

Professor Branch.

Prerequisite, Mech. 33.
Parallel, C. E. 53.
Senior C. E., first term.
Six drawing hours per week, mainly devoted to algebraic and graphic determination of stresses in trusses, etc.

C. E. 54. Framed Structures.

Professor Branch.

Prerequisite, C. E. 53.
Parallel, C. E. 54b.
Senior C. E., second term, three lecture hours.
A course consisting of the design and detailing of a roof truss, a plate girder and a Pratt truss, with determinaton of pin sizes, pin plates, joint plates, camber diagrams, etc. Bills of material are made to accompany the shop drawings. Detail plans of similar structures and of tanks, towers, trestle and steel buildings are studied in and out of class. The course closes with a study of structural erection.

C. E. 54b. Design of Structures.

Professor Branch.

Prerequisite, C. E. 53b.
Parallel, C. E. 54.
Senior C. E., Second Term, six hours.
Drawing room work. Library research and visits to existing plants and structures.

C. E. 55. Reinforced Concrete.

Professor Snow.

Prerequisites, Ex. E. 52a, Mech. 44.
Senior C. E., First Term, one hour recitation and three hours office.

Construction of shear and moment diagrams under intricate loading and practical application in reinforced concrete design; Clapeyron's Theorem and the continuous girder: vertical and horizontal shear and diagonal tension. The Straight Line flexure formulas with a discussion of the parabolic formula and other formulas. The construction of diagrams and their use in the solution of the formulas. The design of slabs, T-beams, girders and columns. One hour per week for first half term and three hours per week for the term are given to the design of a reinforced concrete arch. Three hours per week for one term are devoted to the design of small T-beam and girder bridges.
Text: Hool's "Reinforced Concrete Construction," Vol. 1 and 2.

C. E. 56. Design of Higher Structures in Concrete.

Professor Snow.

Senior C. E., second term, two hours lecture, six hours laboratory.
A continuation of C. E. 55, devoted mainly to the design of special structures, high office building,s etc. The students are divided into groups of two each, and each group given a special problem. While each student is placed very largely on his own resources and given access to the blue print files, etc., he is carefully watched and guided by his instructor to prevent him from arriving at absurdities.

C. E. 57a. Highway Engineering.

Professor Snow and Mr. Lucas.

Prerequisite, C. E. 24., C. E. 46.
Senior C. E., first term, two lectures, three hours laboratory.
This course includes the historic, economic, and structural phases of highway engineering. special emphasis is placed on traffic census, traffic development and traffic classification as related to type of highway; to plotting, mapping, paper location, and final field location from reconnaissance and location surveys; to soil classification and use in construction and maintenance; to selection and construction of type of road to give the maximum service at a minimum cost; to effect of traffic on permanence of wearing surface; to preserving surfaces through artificial bniders; and to road machinery. The laboratory work will include a study of road materials, with especial emphasis upon the testing of stone, clay, brick, concrete, etc.

C. E. 58. Highway Engineering.

Professor Snow.

Prerequisite, Mech. 44.
Senior C. E., second term, three lectures.
This course is a continuation of C. E. 57. It includes the design of highway structures; the maintenance of various types of pavements; road law, road specifications, and contracts; bond issues and other methods of financing; also a study of foreign highway practice and road systems.

Text same as in C. E. 57, together with bulletins of Office of Public Roads, state highway departments, etc., and current road literature.

C. E. 61. Engineering Contracts and Specifications.

Professor Snow.

Prerequisite, admission to Senior C. E., two hours lecture.
The purpose of this course is to teach the principles of contracting so that the student will have a basic knowledge of this branch of engineering. It covers the theories of contracts as related to engineering, especially municipal and highway work. It explains how to write contracts, bonds and general specifications; deals with specifications for materials and methods of slating just what is required in construction.

SCHOOL OF COMMERCE

Professors Watters and Dennison. Messrs. Byington, Boyd, Lewis, Reese, Wilson, Meyer, Kell, Seeger, Russell, Robinson, Burkhart.

Training for Executive Positions

Men who have been successful in a legitimate business have in some way been retained for that success. They may have been trained in the business itself. If they have been, years of experience have brought them to the point where they observe certain definite principles of business action. Consciously or unconsciously, these principles are applied to the solution of problems as in law, medicine and other professions.

The Commerce course contains the essentials for a well rounded business training and eliminates the subjects usually studied for the sake of having studied them. It covers the fields of Business administration, Accounting, Advertising, Salesmanship, Finance, Credits and Law. This special training added to native ability will enable a business man to expand his business or to improve his situation.

The instruction in the School of Commerce, Georgia School of Technology, aims to prepare ambitious and energetic young men for business and to assist older men already in business to equip themselves for more responsible positions. This work is based on the belief that through a study of commercial methods and economic forces, young men can obtain valuable mental discipline and at the same time acquire technical training, useful in business.

The South, is in need of trained men—men qualified to fill responsible positions, to step into the vacancies occurring in every large business, to direct other men in their work. To equip the young men of the South for taking advantage of these opportunities is the object of the School of Commerce. This is not a so-called "business college." The courses are of standard college rank accredited by the Eastern universities.

Advantage of Location

The School of Commerce is fortunately located. Atlanta is the financial, manufacturing and distributing center for the South. Practically every large business concern in the United States has an office in this city. This fact coupled with Atlanta's many home industries makes it possible to bring the students into close contact with actual business conditions and to give them practical experience in business work.

Day and Evening Schools

The courses described in this catalog are given in the day school. Business men of Atlanta, who are employed during the day, should write for special bulletin giving a complete course of study offered in the evening school. The day school is located on the college campus at 165 West North Avenue. The evening school classes are held at 18 Auburn Avenue, in the business district of the city.

Degrees Conferred.

The course in the day school leads to the degree of B. S. in Commerce; in the evening school leads to the degree of B. C. S. (Bachelor of Commercial Science). To receive the B. C. S. degree the student must have had at least two years of successful business experience while taking the course. Students are advised to enter the day school if possible.

Elective Courses.

Students who are preparing themselves to enter certain lines of business and find it to their advantage to substitute a limited amount of work in one of the engineering departments for courses in the School of Commerce, may do so upon recommendation of the dean and approval of the faculty. This institution offers excellent opportunities for commerce students to receive practical working knowledge of Mechanical, Civil, Electrical, Chemical and Textile Engineering and Architecture.

Advanced Standing

Students from other approved institutions who have completed satisfactorily two full years, sixty-four semester hours, may enter the Junior Class. They will be conditioned in the following subjects if credits for them are not filed: English 11, 12, 24 and 31; Mathematics 11 and 15; Commerce 13, 14, 15 and 16. Students transferring from other departments of the Georgia School of Technology, who have completed 200 equivalent hours, may enter the Junior Class under the same conditions as above.

Students entering under the above conditions must pass 213 equivalent hours, including Commerce 23-24, 25-26, 31-32, 47-48 and 75-76, and elect the remaining hours from the subjects listed under the heads of Accounting, Finance, Marketing, Management, and Law. Additional advanced credits can be given only on commerce subjects taken in an accredited school of commerce of collegiate grade.

Four Year Courses in Commerce

The schedules of all Commerce students are the same during the first two years. Specialization begins during the Junior year. The courses offered during the first two years are foundation courses forming a basis for the last two years. While the courses offered during the Junior and Senior years are largely elective, when a subject is once placed on a student's schedule it becomes a requirement for graduation. If the course continues through two terms both terms must be passed.

The student may elect upon entering the Junior year, one of the following groups of courses:

ACCOUNTING COURSE—Designed for persons expecting to take up professional or private accounting, or office management.

BANKING AND FINANCE COURSE—Given to prepare men to enter the fields of banking, finance, or to become secretary and treasurer, or manager of a corporation. This course is, also, recommended to persons desiring a general course in business.

MERCHANDISING AND ADVERTISING COURSE—Designed for the student who expects to enter a retail or a wholesale business, or to become an advertising or a sales manager of a manufacturing concern, or to enter the professional field of advertising.

REAL ESTATE AND INSURANCE COURSE—Designed for persons who expect to enter the field of real estate, fire or life insurance business. Additional courses in insurance not listed in the catalogue are in course of preparation to be offered during the senior year.

FRESHMAN YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Com. 11	Economics: Resources and Industries	2		5.
Com. 13	Accounting: Introductory	1	6	8.
Com. 15	Law: Contracts and Agency	3		7.5
Com. 17	Management: Business Organization	3		7.5
Math. 9	Mathematics: Business	3		7.5
Eng. 11&15	English: Rhetoric and Theme Writing	3	1	8.5
M. E. 3a	Woodshop		3	3.
Mil. 1	Military Instruction		5	5.
	Total..	15	15	52.

Second Term

Com. 12	Economics: Resources and Industries	2		5.
Com. 14	Accounting: Introductory	1	6	8.
Com. 16	Law: Partnership and Negotiable Instruments	3		7.5
Com. 18	Management: Business Organization	3		7.5
Math. 10	Mathematics: Business	3		7.5
Eng. 12&16	English: Rhetoric and Theme Writing	3	1	8.5
M. E. 11b	Machine Shop		3	3.
Mil. 2	Military Instruction		5	5.
	Total..	15	15	52.

SOPHOMORE YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Com. 23	Accounting: Principles	2	6	10.
Com. 25	Marketing: Salesmanship	3		7.5
Com. 27	Law: Corporation and Insurance	3		7.5
Com. 29	Management: Railway Traffic	2		5.
Com. 31	Finance: Principles	3		7.5
Eng. 24	Economics: Principles	3		7.5
Mil. 5	Military Instruction		5	5.
	Total..	16	11	50.

Second Term

Com. 24	Accounting: Principles	2	6	10.
Com. 26	Marketing: Advertising	3		7.5
Com. 28	Law: Suretyship and Real Estate	3		7.5
Com. 30	Management: Railway Traffic	2		5.
Com. 32	Finance: Banking	3		7.5
Eng. 21	English: American Literature	3		7.5
Mil. 4	Military Instruction		5	5.
	Total..	16	11	50.

ACCOUNTING

JUNIOR YEAR

For outline of Freshman and Sophomore years see above.

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required courses			
Com. 41	Accounting: Problems	3		7.5
Com. 43	Accounting: Cost	2	3	7.5
Com. 47	Finance: Corporation	3		7.5
Com. 75	Marketing: Business English	2		5.
Eng. 31	English Literature	3		7.5
M. L.	Spanish, French, or German	3		7.5
	Total required..			42.5

Students must elect ten equivalent hours from the following courses:

Com. 21	Accounting: Theory	2		5.
Com. 53	Marketing: Merchandise	3		7.5
Com. 49	Economics: Industrial History	2		5.
Com. 45	Marketing: Foreign Trade	2		5.
Com. 51	Economics: American Government	2		5.
Mil. 5	Military Instruction			7.5

Second Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
Com. 42	Accounting: Problems	2	3	7.5
Com. 44	Accounting: Cost	3		7.5
Com. 48	Finance: Corporation	3		7.5
M. L.	Spanish, French, or German	3		7.5
Com. 76	Marketing: Business English	2		5.
	Total required..			35.

Students must elect 17 equivalent hours from the following courses:

Com. 22	Accounting: Theory	2		5.
Com. 54	Marketing: Merchandising	3		7.5
Com. 50	Economics: Industrial History	2		5.
Com. 46	Marketing: Foreign Trade	2		5.
Com. 52	Economics: American Government	2		5.
Eng. 32	English Literature	3		7.5
Mil. 6	Military Instruction			7.5

SENIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
Com. 61	Accounting: Auditing	3		7.5
Com. 83	Accounting: Income Tax	2		5.
Com. 85	Accounting: Advanced Problems	2		5.
M. L.	Spanish, French, or German	3		7.5
	Total..			25.

Students must elect 27 equivalent hours from the following courses:

Com. 73	Finance: Investments	3		7.5
Com. 69	Management: Industrial	3		7.5
Com. 87	Management: Life and Accident Ins.	3		7.5
Com. 63	Marketing: Applied Advertising	2	3	7.5
Com. 79	Marketing: Applied Salesmanship	2	3	7.5
Com. 81	Research Work		3-9	3-9
Mil. 7	Military Instruction			7.5

Second Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
Com. 62	Accounting Auditing	3		7.5
Com. 84	Accounting: Income Tax	2		5.
Com. 86	Accounting: Advanced Problems	2		5.
Com. 70	Credits and Collections	3		7.5
	Total..			25.

Students must elect 27 equivalent hours from the following courses:

Com. 74	Finance: Investments	3		7.5
Com. 68	Management: Real Estate	3		7.5
Com. 67	Management: Fire and Casualty Ins.	3		7.5
Com. 64	Marketing: Applied Advertising	2	3	7.5
Com. 80	Marketing: Applied Salesmanship	2	3	7.5
Com. 82	Research Work		3-9	3-9
M. L.	Spanish, French, or German	3		7.5
Mil. 8	Military Instruction			7.5

MERCHANDISING AND ADVERTISING

JUNIOR YEAR

For outline of Freshmand and Sophmore work see page 73.

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
Com. 53	Marketing: Merchandising	3		7.5
Com. 75	Marketing: Business English	2		5.
Com. 47	Finance: Corporation	3		7.5
Com. 49	Economics: Industrial History	2		5.
M. L.	Spanish, French, or German	3		7.5
Eng. 31	English: English Literature	3		7.5
	Total required..			40.

12 equivalent hours to be elected from the following list:

Com. 41	Accounting: Problems	3		7.5
Com. 43	Accounting: Cost	2	3	7.5
Com. 45	Marketing: Foreign Trade	2		5.
Com. 51	Economics: American Government	2		5.
Arc. 15	History of Architecture, Ancient	2		5.
Mil. 5	Military Instruction			7.5

Second Term

	Required Courses:			
Com. 54	Marketing: Merchandising	3		7.5
Com. 76	Marketing: Business English	2		5.
Com. 48	Finance: Corporation	3		7.5
Com. 50	Economics: Industrial History	2		5.
M. L.	Spanish, French, or German	3		7.5
Eng. 32	English: English Literature	3		7.5
	Total required..			40.

Student must elect 19½ hours from the following list:

Com. 42	Accounting: Problems	3		7.5
Com. 44	Accounting: Cost	2	3	7.5
Com. 46	Marketing: Foreign Trade	2		5.
Com. 52	Economics: American Government	2		5.
Eng. 32	English: English Literature	3		7.5
Arc. 15	History of Architecture, Mediaeval	2		5.
Mil. 6	Military Instruction			7.5

SENIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
Com. 63	Marketing: Applied Advertising	2	3	7.5
Com. 79	Marketing: Applied Salesmanship	2	3	7.5
M. L.	Spanish, French, or German	3		7.5
	Total..			22.5

Student must elect 29.5 equivalent hours from the following courses:

Com. 87	Management: Life and Accident Ins.	3		7.5
Com. 69	Management: Industrial	3		7.5
Com. 73	Finance: Investments	3		7.5
T. E. 4	History of Architecture, Modern	2		5.
Arc. 27	Cotton Grading	3		7.5
Com. 61	Accounting: Auditing	3		7.5
Com. 83	Accounting: Income Tax	2		5.
Com. 81	Research Work		3-9	3-9
Mil. 7	Military Instruction			7.5

Second Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
Com. 64	Marketing: Applied Advertising	2	3	7.5
Com. 80	Marketing: Applied Salesmanship	2	3	7.5
Com. 70	Management: Fire and Casualty Ins.	3		7.5
	Total..			22.5

Student must elect 29.5 equivalent hours from the following courses:

Com. 67	Management: Fire and Casualty Ins.	3		7.5
Com. 68	Management: Real Estate	3		7.5
Com. 74	Finance: Investments	3		7.5
M. L.	Spanish, French, or German	3		7.5
Com. 62	Accounting: Auditing	3		7.5
Com. 84	Accounting: Income Tax	2		5.
Com. 82	Research Work		3-9	3-9
Mil. 8	Military Instruction			7.5

BANKING AND FINANCE

JUNIOR YEAR

For outline of Freshman and Sophomore work see page—?

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
Com. 47	Finance: Corporation	3		7.5
Com. 41	Accounting: Problems	3		7.5
Com. 51	Economics: American Government	2		5.
Com. 75	Marketing: Business English	2		5.
Eng. 31	English: English Literature	3		7.5
M. L.	Spanish, French, or German	3		7.5
	Total..			40.

Student must elect 17 equivalent hours from the following list:

Com. 43	Accounting: Cost	2	3	7.5
Com. 49	Economics: Industrial History	2		5.
Com. 21	Accounting: Theory	2		5.
Com. 53	Marketing: Merchandising	3		7.5
Com. 45	Marketing: Foreign Trade	2		5.
Mil. 5	Military Instruction			7.5

Second Term

	Required Courses:			
Com. 48	Finance: Corporation	3		7.5
Com. 42	Accounting: Problems	3		7.5
Com. 52	Economics: American Government	2		5.
Com. 76	Marketing: Business English	2		5.
M. L.	Spanish, French, or German	3		7.5
	Total..			32.5

Students must elect 17 equivalent hours from the following list:

Com. 44	Accounting: Cost	2	3	7.5
Com. 50	Economics: Industrial History	2		5.
Com. 22	Accounting: Theory	2		5.
Com. 54	Marketing: Merchandising	3		7.5
Com. 46	Marketing: Foreign Trade	2		5.
Eng. 21	English: American Literature	3		7.5
Mil. 6	Military Instruction			7.5

SENIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
Com. 73	Finance: Investments	3		7.5
Com. 61	Accounting: Auditing	3		7.5
Com. 63	Marketing: Applied Advertising	2	3	7.5
Com. 83	Accounting: Income Tax	2		5.
M. L.	Spanish, French, or German	3		7.5
	Total..			35.

Students must elect 17 equivalent hours from the following list:

Com. 87	Management: Life and Accident Ins.	3		7.5
Com. 69	Management: Industrial	3		7.5
Com. 81	Research Work			3-9
Com. 79	Marketing: Applied Salesmanship	2	3	7.5
C. E. 21	Plane Surveying	1	3	5.5
Mil. 7	Military Instruction			7.5

Second Term

	Required Courses:			
Com. 74	Finance: Investments	3		7.5
Com. 62	Accounting: Auditing	3		7.5
Com. 64	Marketing: Applied Advertising	2	3	7.5
Com. 84	Accounting: Income Tax	3		5.
Com. 70	Finance: Credits and Collections	3		7.5
	Total..			35.

Student must elect 17 equivalent hours from the following list:

Com. 67	Management: Fire and Casualty Ins.	3		7.5
Com. 68	Management: Real Estate	3		7.5
Com. 82	Research Work			3-9
Com. 80	Marketing: Applied Salesmanship	2	3	7.5
M. L.	Spanish, French, or German	3		7.5
Mil. 8	Military Instruction			7.5

REAL ESTATE AND INSURANCE

For outline of Freshman and Sophomore work see page?

JUNIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Subjects:			
Arc. 15	History of Architecture, Ancient	2		5.
Com. 47	Finance: Corporation	3		7.5
Com. 75	Marketing: Business English	2		5.
Com. 51	Economics: American Government	2		5.
Math. 11	Mathematics: Algebra	3		5.
Eng. 31	English Literature	3		7.5
M. L.	Spanish, French, or German	3		7.5
	Total..			45.

Student must elect 7½ equivalent hours from the following list:

Com. 41	Accounting: Problems	3		7.5
Com. 43	Accounting: Cost	2	3	7.5
Com. 53	Marketing: Merchandising	3		7.5
Mil. 5	Military Instruction			7.5

Second Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Subjects:			
Arc. 16	History of Architecture, Medieaval	2		5.
Com. 47	Finance: Corporation	3		7.5
Com. 76	Marketing: Business English	2		5.
Com. 52	Economics: American Government	2		5.
Math. 15	Mathematics: Trigonometry	3		7.5
M. L.	Spanish, French, or German	3		7.5
	Total..			37.5

Student must elect 14 equivalent hours from the following list:

Com. 42	Accounting: Problems	3		7.5
Com. 44	Accounting: Cost	2	3	7.5
Com. 54	Marketing: Merchandising	3		7.5
Eng. 32	English Literature	3		7.5
Mil. 6	Military Instruction			7.5

SENIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
	Required Courses:			
C. E 21	Plane Surveying	1	3	5.5
Com. 87	Management: Life and Accident Ins.	3		7.5
Arc. 27	History of Architecture, Modern	2		5.
Com. 79	Marketing: Applied Salesmanship	2		5.
Com. 63	Marketing: Applied Advertising	2	3	7.5
M. L.	Spanish, French, or German	3		7.5
	Total..			40.5

Student must elect 9½ equivalent hours from the following list:

Com. 69	Management: Industrial	3		7.5
Com. 73	Finance: Investments	3		7.5
Com. 61	Accounting: Auditing	3		7.5
Com. 83	Accounting: Income Tax	2		5.
Mil. 7	Military Instruction			7.5

Second Term

	Required Courses:			
Com. 68	Management: Real Estate	3		7.5
Com. 67	Management: Fire and Casualty Ins.	3		7.5
Com. 70	Finance: Credits and Collections	3		7.5
Com. 80	Marketing: Applied Salesmanship	2	3	7.5
Com. 64	Marketing: Applied Advertising	2	3	7.5
	Total..			37.5

Student must elect 14½ equivalent hours from the following list:

Com. 74	Finance: Investments	3		7.5
Com. 62	Accounting: Auditing	3		7.5
Com. 84	Accounting: Income Tax	2		5.
M. L.	Spanish, French, or German	3		7.5
Mil. 8	Military Instruction			7.5

ACCOUNTING

Com. 13 and 14. Introductory Accounting.

Freshman, first and second terms, one hour recitation and six hours laboratory.

This is an introductory course in bookkeeping preparatory to the course in accountng. It does not require a previous knowledge of bookkeeping. It includes the theory of debits and credits, the construction of the trial balance, the profit and loss statement, and the balance sheet. Practice is given in the use of the various types of modern books of original entry. Students who have completed a high school course in bookkeeping may substitute another course for the first term's work by securing a special permit from the head of the department. All commerce students will be required to take the second term's work.

Com. 21 and 22. Theory of Accounts.

Offered in the Evening School only.

Com. 23 and 24. Principles of Accounting.

Sophomore, first and second Terms, two hours recitation and six hours laboratory.

This course represents the connecting link between theory and practice. The handling of each individual asset account, and liability account, is taken up in detail, giving the "why" of each step and illustrating the practical application with a problem. The preparation of the different forms of balance sheets, profit and loss accounts, statements of affairs, statements of realization and liquidation are illustrated and explained in full. The course is built up to show the evolution of the holding company by means of explaining the legal types of organization preceding the same, namely, sole proprietorship, co-partnership and corporation. All commerce students are required to take this course. Prerequisite: Com. 13-14.

COM. 41 and 42. Practical Accounting Problems.

Junior, first and second terms, three hours recitation.

This course covers the part of the field of accounting which is encountered in every day business and on C. P. A. examinations. It deals with single entry statements of profit and loss, single entry balance sheet construction, work sheet for adjusting a trial balance the preparation of statements for factory operations, the opening and closing of sets of accounts for the different forms of organizations, the special problems of different corporate openings, problems involved in mergers, consolidations, promotions, holding companies, stock donations, refunding, voluntary bankruptcy, statement of affairs and deficiency account, receivership, reorganization, realization and liquidation of insolvent sole proprietors, administrative accounts. In all problems the work sheets and various report forms are worked out as the case may require. The problems have been taken from practical experience in the accounting field and from C. P. A. examinations.

Prerequisite: Com. 23-24.

Com. 43 and 44. Factory Cost Accounting.

Junior, first and second terms, two hours recitation, three hours laboratory.

Lectures will be given explaining the elements of costs, principles and general methods of cost finding, direct and indirect, expenses, wage systems, recording material and labor costs, devising cost systems. The students will be required to work up a set of manufacturing cost books during the first semester. During the last semester they will be given problems involving the various phases of cost acounting.

Special emphasis will be given to problems relating to textile and cotton oil mills, lumberin gand other distinctly Southern industries.

Prerequisite: Com. 23-24.

Com. 61 and 62. Auditing, Theory and Practice.

Senior, first and second terms, three hours recitation.

This course prepares the manager to investigate the operation of his own business, the prospective investor to determine the value of the proposition, the student to practice the public accounting profession. The student will be taught to prepare audit programs for various classes of business. Methods of accounting used by unsuccessful concerns will be explained and the causes of the failure ana-

lyzed. Methods followed by concerns in need of capital involving hypothecation of assets, and manipulation of accounts with allied and subsidiary concerns will be discussed. Actual practice will be given in the audit of books of various lines of business.

Prerequisite: Com. 23-24, and 41-42.

Com. 83 and 84. Income Tax.

Senior, first and second terms, two hours recitation.

This is a study of the income and excess profits law and the treasury rulings relating to same. Problems will be submitted covering the details of making up corporation and personal income tax reports. This course is given in the evening school by professional income tax expert, and may be elected by day students who have completed Com. 41 and 42.

Com. 85 and 86. Advanced Accounting Problems.

Senior, first and second terms, two hours recitation.

This course consists of a study of C. P. A. problems which have been given on previous examinations. It is intended for persons who expect to take up the professional practice of accounting.

Prerequisite: All accounting courses described above.

ECONOMICS

Com. 11 and 12. Economic Resources and Industries.

Freshman, first and second terms, two hours recitation.

This course forms a foundation for the study of Marketing, Economics, and Finance. It covers the study of the location and distribution of natural resources, the location of industrial enterprises and the influence of geographical and climatic conditions on the development of trade. Special attention will be given to the study of mineral and food products, textile materials, skins, and leather goods, oils, woods, drugs, dye-stuffs, and how they influence the growth of cities and transportation facilities.

Com. 49 and 50. Industrial History.

Junior, first and second terms, two hours recitation.

This course traces the progress and development of Europe and its effect on the commercial situation in America. It shows the relation between commercial progress and political history. Special emphasis is given to the development of industry, agriculture and land tenure, growth of slavery, internal improvements, finance, development of banking, combination of labor and capital, growth of transportation facilities, natural resources, large scale manufacturing, commercial expansion, education and general social life.

Com. 51 and 52. American Government.

Juniors, first and second terms, two hours recitation.

The primary purpose of this course is not only to develop better and more intelligent citizenship, but particularly to have the student understand the intimate relationship between government and busi-

ness. After brief consideration of the framework and functions of the branches of government, especial emphasis is laid upon the regulation and promotion of business through statutes and commissions. Cases and judical decisions are employed to show the division of constitutional authority over business between the states and the federal government.

FINANCE

Com. 31. Principles of Finance.

Sophomore, first term, three hours recitation.

A study of the causes which lead to the rise and fall of prices. The relation of money values to market prices; functions of money, quantities of money, banking and medium of exchange, centralized and decentralized banking systems, panics and industrial depressions and monetary problems. All Commerce students are required to take this course.

Com. 32. Banking.

Sophomore, second term, three hours recitation.

This course serves a two-fold purpose. It gives a working knowledge of a bank and at the same time teaches the student how to use the services of the bank to the greatest advantage in other lines of business. It deals with modern banking functions, classes of banks; bank loans, special loan problems, bank deposits, domestic exchange, foreign exchange, bank notes, clearing houses, bank organization and administration, capital and reserves, statements, government regulations, Federal Reserve Act and the operation and control of the Reserve System. Prerequisite: Com. 31 and English 24.

Com. 47 and 48. Corporation Finance.

Junior, first and second terms, three hours recitation.

Nearly every business man is interested in the formation or management of a corporation, or in buying and selling stocks of corporations. The methods by which corporations are organized and financed and the principles that underlie corporate management are explained. The difference between what is permissible at law and what is expedient in practice will be emphasized. The course includes the instruments of finance, the methods of raising the managing investments and working capital, inter-business relations, distribution of profits, causes and remedies for failures.

Com. 73 and 74. Investments.

Senior, first and second terms, three hours recitation.

This course is intended to present the methods of analyzing and determining the values of the various kinds of stocks and bonds. It prepares the business man to seek out safe investment for his money. A life-time's saving may be lost in a day. It, also, gives special preparation for a position as secretary and treasurer of a corporation. The students will be required to study and make reports on stocks and bonds of railway, manufacturing, banking and other classes of corporations, also on municipal and farm bonds and mortgages.

Prerequisite: Com. 47-48.

Com. 70. Mercantile Credits.

Senior, second term, three hours recitation.

A practical study of the factors to be considered when credit is granted, and the routine of the credit and collection departments. It explains the duties of the members of the credit department, the granting of credit to customers, bank credits, commercial agencies, interchange of credit information about customers, checking orders, collection and credit man's methods, causes of failure, bankruptcy of claims and adjustments. Prerequisite: Com. 23-24, 31-32.

LAW

Com. 15. Law of Contracts and Agency.

Freshman, first term, three hours recitation.

This course gives the student a working knowledge of the law of contracts and agencies and its relation to business. It deals with laws and the principles of law in general with the elements necessary to a contract, with the different forms and manifestations of them, with breach of contracts and with the rights and remedies belonging thereto. In agency, the different ways by which agents are appointed, the interests and the rights arising there-from, the powers of the agent and the extent of authority conferred are investigated.

Com. 16. Law of Negotiable Instruments and Partnership.

Freshman, second term, three hours recitation.

This course deals with negotiable contracts and instruments; consideration, negotiation and rights of holders of negotiable paper; liability of parties, presentation for payment, notice of dishonor, discharge; bills of exchange, promissory notes and cheques; partnership relations, capital, property, powers of partners, partnership dissolution and its effects, the liability of individual partners for firm debts.

Com. 27. Law of Corporations and Insurance.

Sophomore, first term, three hours recitations.

This course deals with the formation of corporations, their management, including the issue and transfer of stock, the rights and liabilities of promoters, stockholders and directors; the proper method of holding corporate meetings and keeping the records thereof; the taxes required of the ordinary business corporation.

It deals also with fire insurance, special policy provisions, loss and proceedings, life and accident insurance.

Com. 28. Law of Real Estate and Suretyship.

Sophomore, second term, three hours recitation.

This course covers carriers, guaranty and suretyship and real property. It deals with carriers of goods, their liability and duty to deliver, and other public duties; guaranty and suretyships, real property, estates and title, mortgages, landlord and tenant, wills and administration.

MANAGEMENT.

Com. 17 and 18. Business Organization.

Freshman, first second terms, three hours recitation.
This course includes a broad, general survey of the field of business. Amercia has given the world the modern business man, and this course will endeavor to show the important place which business occupies in the everyday life of the American people; that is, how our everyday necessities would be impossible of attainment but for modern business. The course will also show the part played by the various divisions of business, including finance, accounting, advertising, and selling, banking, transportation, and business law.

Com. 29 and 30. Railway Traffic.

Sophomore, first and second terms, two hours recitation.
The theory of rate making, competition of transportation lines, transportation monopoly, discriminations and their effects, and rate regulation. Particular attention is devoted to leading decisions of the Interstate Commerce Commission.

Com. 67. Fire and Casualty Insurance.

Senior, first term, three hours recitation.
This subject is treated from the viewpoint of both the policy-holder and the insurance company. It involves a study of types of policies, policy contracts, principles of rate making, hazards, reserves for protection of policy holders, examination of the company to determine its safety, adjustments of losses, fire protection and prevention, state regulation and fixing of rates, and the methods of organizing an insurance company or agency.

Com. 87. Life and Accident Insurance.

Senior, first term, three hours recitation.
This course is intended for persons who expect to go into the life and accident insurance business. It covers the methods of operating district and branch offices, insurance policies, and insurance salesmanship.

NOTE.—Additional courses in insurance are being planned to be offered during the school year of 1921-22. Write for special bulletin.

Com. 68. Real Estate.

Senior, second term, three hours recitation.
A man can scarcely be in business without becoming interested in real estate, either as owner or lessee. It is often profitable and sometimes a dangerous field of investment. This is a practical course dealing with the business problems connected with the sale, purchase and management of real estate. The following topics are included in this study; real estate brokerage, contracts in real estate, liens, taxes and assessments, the transfer of titles, deeds, bonds and mortgages, leases, methods of arriving at the valuation of real estate, surveyors' relations to real estate and the work of the architect, and land registration.

Com. 69. Industrial Management.

Senior, first term, three hours recitation.
This course involves a study of the fundamental principles of factory organization and how these principles may be applied in placing a manufacturing business on a profitable basis. It discusses organization elements of an industrial body; departmental authorities—their duties and responsibilities, how to pay labor, welfare work, depreciation and its relation to costs, how the executive may keep in touch with his factory and how to cut labor costs.

MARKETING

Com. 25. Salesmanship.

Sophomore, first term, three hours recitation.
This course deals with the elementary principles of salesmanship and sales management. The first part will take up the principles of personal salesmanship, while the latter half will deal with sales management. Among the topics discussed are the essential personal qualifications of the salesman, preparing for the interview, methods of closing, handling objections, organizing and opening new territory, training salesmen, and methods of stimulating salesmen to give their best efforts. The purpose of the course is to give the student a broad, general knowledge of salesmanship and sales management. All commerce students are required to take this course.

Com. 26. Advertising.

Sophomore, second term, three hours recitation.
This course considers the elementary principles of advertising campaigns. Topics discussed will include general plan for the campaign, appropriation, media, co-operation between the sales and advertising departments, organization of advertising department, finding selling points, writing copy, and advertising display (including illustrations, layouts, and methods relating to use of type). The purpose of the course is to give the student a broad general knowledge of the field of advertising. Prerequisite: Com. 25.

Com. 45 and 46. Foreign Trade.

Junior, first and second terms, two hours recitation.
This course involves a study of the methods used by exporting and banking houses of the country, selecting export markets, development of the markets for articles to be exported, possible substitutions—customs, habits, social or economic condition affecting the possible use in a foreign country; international credits, selling methods, contracts, and foreign exchange. Special attention will be given to South American trade.

Com. 53 and 54. Marketing and Merchandising.

Junior, first and second terms, three hours recitation.
This course will take up a study of the modern distributive process. The problems of the manufacturer in marketing his products will first be considered. Next the buying and selling problems

of the wholesaler and retailer will be discussed. The special province of the specialty store, the department store, the chain store, the co-operative store, and the mail order house will be gone into. An intensive study will be made of the problems of the wholesaler and retailer, including stock keeping, buying, training, and winning of the co-operation of employees, the importance of turnover, perpetual inventory, and how to find the needs of customers.

Com. 63 and 64. Applied Advertising.

Senior, first and second terms, two hours recitation, three hours laboratory.

This course aims to teach students how to carry on successful advertising by giving them actual experience in writing copy and planning campaigns which will be used in local selling drives. The class will be organized along the lines of an advertising department, and the members given definite copy assignments. Detailed instruction will be given in writing copy, the use of direct advertising (including sales letters, booklets, catalogs, and house organs), choosing art, and finding selling points. Special attention will be given to ways of securing co-operation between the sales and advertising departments. The functions and services of the sales promotion department will also be considered. Students will visit local engraving and lithographing plants in order to learn how cuts are made and how advertisements are set up. Prerequisites: Com. 25-26, 53-54, and 75-76.

Com. 75 and 76. Business English.

Junior, first and second terms, two hours recitation.

The daily correspondence of every concern is a great opportunity for advertising. Every letter that is properly written lays the foundation for future business. The type of the letter indicate the type of the concern. Tactful letters save customers and make friends. This course teaches how to make every letter a sales letter whether it be to sell goods, collect money, or adjust a complaint. Lectures are given covering the elements of letter writing, special emphasis being given to the preparation of sales letters. Then the student is required to write a letter embodying the principles covered. The letter is reviewed by the instructor. The faults are corrected, the good points are noted and suggestions are made to assist the student to improve his style. Prerequisite: Com. 25-26

Com. 79 and 80. Applied Salesmanship and Sales Management.

Senior, first and second terms, two hours recitation and three hours laboratory.

The purpose of this course is to teach students to sell by giving them actual experience in house selling, as well as selling for local business concerns. The class will be organized along the line of a sales department and the members given definite sales problems, such as methods of selling what are generally called "hard nuts," unusual methods of demonstrating merchandise, successful methods of closing sales, how to get an audience with customers that are difficult to see, and how to develop in one's self the pleasing personality which is essential to successful selling. The course will consider salesmanship as a friendly, red-blooded, man-to-man transaction where personality counts as well as the scientific process. Prerequisite: Com. 25-26.

RESEARCH

Com. 81 and 82. Research Work.

Senior, first and second terms, from three to nine hours laboratory.

Members of the senior class who elect this course will be assigned to a business concern engaged in the line of work the student expects to follow upon graduation. The student will make a thorough study of the operations of the concern to which he is assigned by working in each department. He will also be required to make a general survey of the methods being used by other concerns engaged in similar lines. A thesis covering the studies made during the year will be required. Only students who are expecting to graduate the following commencement will be permitted to take this course.

CO-OPERATIVE PLAN

GENERAL ENGINEERING (COMBINING ELECTRICAL AND MECHANICAL ENGINEERING) AND TEXTILE ENGINEERING

Prof. T. B. Branch, Dean.

Associate Prof. C. A. Kapp, Co-ordinator.

Student Asst. G. F. Hoffman, Asst. Co-ordinator.

Since 1912 the Georgia School of Technology has offered two courses in Engineering, the standard four year theoretical course as given by other engineering colleges and a five year co-operative course in which the student spends, alternately, four weeks in college and four weeks in practical engineering work in the shops of Atlanta and the cities within a radius of about one hundred miles.

The Co-operative Department offers two courses, one in General Engineering (combining Electrical and Mechanical) which leads to the degree of B.S. in Engineering, Co-operative Plan, and one in Textile Engineering which leads to the degree of B.S. in Textile Engineering, Co-operative Plan.

The course in General Engineering combines all the fundamental principles in Electrical and Mechanical Engineering, omitting a few purely specialized subjects and offering instead Modern Production Methods, Accounting, Commercial Law, Corporation Finance, etc.

Should a student desire to specialize in any branch of Electrical or Mechanical Engineering, he would be placed during the last two or three years in school in such an industry as would give him the practical knowledge of the speciality he desires to follow.

This course is planned to equip the student for a position in either the designing, production, sales, or executive department of industry.

In the Co-operative Plan the students are divided into two Groups, or Sections, Section 1 and Section 2.

Section 1 reports to college for 4 weeks during which time it is given the regular class room work. At the same time Section 2 is working in the various shops in and about Atlanta. At the end of this four-week period the sections change places, Section 1 going to work in the shops, while Section 2 takes its place in college. At the end of the second 4 weeks the sections again reverse positions and thus the class and shop work is carried on throughout the year. The student always returns to the same job until the shop officials and the college officials advance him to a higher grade of work. In this manner the student receives training in all branches of work in the factory.

This course extends for the full twelve months of the year, the student being given a vacation, on college time, of two weeks in the summer and one week during the Christmas Holidays.

The manufacturers find that they get a boy who takes an interest in his work while the boy gets all the advantages of "rubbing elbows" with the working man, seeing and doing things under actual manufacturing conditions so that, when he graduates from college, he can at once take up the duties of his chosen engineering profession without first serving a two years apprenticeship course as is required by many leading manufacturers of the country.

A corroboration, unintentional and therefore more valuable, of the value of the Co-operative five year plan is gained from a study of the positions held by the graduates of the four year plan and the Co-operative five year plan. It is a well known fact that less than 75 per cent of the engineering graduates from the four year plan ever follow their chosen and studied profession, while records of the graduates of the Co-operative five year plan since its inauguration at Cincinnati University in 1906 show that over 95 per cent are following engineering work.

Let us for a few minutes study and analyze the cause for this difference. Psychologists tell us that any person, when left to make his own choice, will naturally do those things in which he is interested and for which he is best fitted. If he likes and understands engineering he will follow this profession. If he does not like it, or understand it, he will either fail, make a mediocre success of it, or change over entirely to something to which he is interested, although perhaps not schooled in this new work.

The reason for the large percentage of Co-operative graduates following their chosen and studied profession is that they have grown up, so to speak, in the shop or engineering office so that, when they graduate from college, they do not feel lost when asked to undertake some work of large and difficult proportions. They have been doing this kind of work for the past five on alternate four weeks and it is but a continuation, on a larger scale, after they graduate.

The experiences of the past few years have impressed upon the world, as never before, the value of the technically trained man. Students from institutions like The Georgia School of Technology have demonstrated that they have an education which has fitted them for careers of efficient and exceptional service in either war time or peace.

The aim of the Georgia School of Technology is to educate young men for lives of greater usefulness—to give them a training which will enable them to rise to positions of leadership in the business and industrial world. The recent war has forced upon us the necessity (which previously was seldom recognized) of considering the working man as a human being and not merely a machine. It has brought forcibly to our attention the necessity of considering the human relations between employer and employee.

The manager, or other executive, of today who cannot establish and maintain the right personal relations with his workers is considered unfit for this position. It is well known that the Captains of Industry have learned to study human nature by "rubbing elbows" with the working man in the shop and factory.

The Co-operative student (called Co-op.) gains this experience during his weeks of work and, being in his most impressionable age, it leaves an indelible trace on his mind. In addition to this great advantage he absorbs shop methods, shop routine, he sees how things are being done, and, being mentally alert, often suggests how improvements can be made.

TEXTILE ENGINEERING

Cotton is king in the South and the cotton manufacturing industry is reaching such magnitude as to demand far more textile engineers than the schools can supply. The Co-operative Department offers in addition to the General Engineering course, a thorough course in Textile Engineering. These students will be placed at work in the textile mills. In these mills they will actually perform all of the major and many of the minor operations from breaking up the bale of cotton to and including the finished product. This will be in addition to our regular course in Textile Engineering. Any student finishing this course should be a capable Textile Engineer.

Send for the Textile Catalogue which explains thoroughly the equipment at the students' disposal and also shows the various pictures of the mill rooms.

Out of Town Work.

Many of the Co-ops have their homes in the large cities of the state. For these it is evidently advantageous if they can work in the shops of their home town. In this manner the cost of room and board would be greatly reduced and at the same time permitting the student to enjoy the advantages of his home. The schedule has been so arranged that the students who work in shops outside of Atlanta alternate on a four week instead of two week basis. By this method the cost of the railroad fare amounts to one round trip per month.

The co-ordinator will be very glad to give further information to a prospective candidate who wishes to work in one of the shops in his city.

Entrance Requirements.

The entrance requirements for this course are the same as for the four year course.

Tuition fees for the Co-operative students are slightly less per year than for the four year students.

The Co-operative Department Bulletin gives full particulars about fees, scholarships, living expenses and the wages paid the student while at work.

We do not recommend entering the Co-operative course unless you have sufficient funds to complete at least the first year. The student is expected to start work early in July preceding the fall he expects to enter college.

The quality of work that the student does, as well as his fitness to continue the work of the class room, will largely determine whether he will be permitted to start the class room work in August.

Address all communications to:

THE GEORGIA SCHOOL OF TECHNOLOGY,
Co-operative Department,
Atlanta, Georgia.

CO-OPERATIVE PLAN.

1. General Engineering Combining (Electrical & Mechanical Engineernig.)

2. Textile Engineering.

Five hours military drill is required of all Freshmen and Sophomores.

Notation: T means times per week. W means weeks taught. H means hours per recitation.

The number of actual school weeks (exclusive of examination weeks) are as follows:

Freshman, First Term, 7 weeks.

Freshman, Second Term, 10 weeks.

For the other four years the first term is 11 weeks and the second term 10 weeks long.

ALL FRESHMEN CO-OPS.

Abbrev.	Subject	1st. Term W	T	H	2nd. Term W	T	H
Chem.-1-2	Chemistry	7	6	1	10	5	1
Chem.-5-6	Chemistry Lab.	7	2	2	10	2	2
Co-op.-1-2	Co-ordination	7	1	1	10	1	1
Dr.-15-16	Appl. Technical Drawing	7	2	3-4	10	2	3-4
Eng-11-12	Composition & Rhetoric	7	6	1	10	5	1
Eng.-15-16	Theme Writing	7	1	1	10	1	1
Math.-15	Trigonometry	7	6	1			
Math.-16	Slide Rule				10	2	1
Math.-18	Analytical Geometry				10	6	1
Mil.	Military	7	5	1	10	5	1

SOPHOMORE, General Engineering

C. E.-21	Surveying	7	1	4	10	1	4
Co-op.-7-8	Accounting-Commercial Law	11	4	1	10	4	1
Dr. 27-28	Machine Drawing	4	3	3			
	Machine Drawing	7	2	3	10	1	3
Eng.-21	American Literature	11	5	1			
Eng.-24	Economics				10	6	1
Math.-11	Algebra	7	6	1			
Math.-18	Analytical Geometry	4	6	1			
Math.-25	Differential Calculus				10	6	1
Phy.-9-10	Physics	11	4	1	10	4	1
Phy.-30	Physics Laboratory				10	1	3
Mil.	Military	11	5	1	10	5	1

PRE-JUNIOR, General Engineering

C. E.-33	Hydraulics	7	3	1	10	2	1
Dr.-47	Kinematics of Mechanism	11	4	1			
Dr.-48	Kinematics of Mechanism	7	2	3	10	2	3
E. E.-7	Principles of Elect. Eng.	7	2	1	10	2	1
Eng.-31	English Literature	11	2	1	10	2	1
Ex. E.-23	Calibration Lab.	4	4	3			
Ex. E.-76	Power Plants	5	6	1			
Math.-21	Solid Analytical Geometry	4	6	1			
Math.-26	Integral Calculus	7	4	1	10	5	1
Mech.-37	Appl. Mechanics				10	4	1
Phy.-11-11a	Physics	11	4	1	10	4	1
Phy.-31-32	Physics Lab.	7	2	3	10	1	3
Mil.-5-6	Military	11	5	1	10	5	1

JUNIOR, General Engineering

Abbrev.	Subject	1st. Term W	T	H	2nd. Term W	T	H
Co-op.-40	Production Methods				10	3	1
E. E.-8	Electrical Engineering	7	6	1	10	5	1
E. E.-16	Electrical Lab.	7	1	3	10	2	3
Eng.-32	English Literature	11	4	1			
Ex. E.-56	Hydraulics & Materials Lab.	4	4	3			
Ex. E.-77	Thermodynamics	7	4	1	10	5	1
Ex. E.-81-82	Fuels & Steam Engine Lab.	7	2	3	10	2	3
Math.-35	Differential Equations	4	6	1			
Mech.-38	Applied Mechanics	6	6	1			
Mech.-48	Mechanics of Materials	4	6	1			
M. E.-61	Mechanics of Materials	7	3	1	10	3	1
Mil.	Military (Elec. for Spanish)	11	5	1	10	5	1

SENIOR, General Engineering

Senior classes start about August 30, to alow for Military Camp. Those students not attending Military Camp are required to work during this period.

C. E.-52	Structures	7	2	3			
Co-op.-41	Production Methods	7	3	1			
Co-op.-50-51	Corporation Finance	7	3	1	10	3	1
E. E.-9-10	Alt. Current Machinery	7	6	1	10	6	1
E. E.-17-18	Electrical Lab.	7	2	3	10	2	3
E. E.-30	Electrical Transmission				10	5	1
Ex. E.-80	Hydro-Elec. Power Plants				10	3	1
Ex. E.-88	Gas Engine Lab.	7	2	3			
M. E.-71-72	Machine Design	7	1	4	10	2	3
Mil.	Military (Elec. for Spanish)	7	5	1	10	5	1

SOPHOMORE, Textile Engineering

Chem.-9-10	Chemistry	11	2	3	10	1	3
Dr.-27-28	Machine Drawing	11	2	3	10	1	3
Eng.-21	American Literature	11	5	1			
Eng.-24	Economics				10	6	1
Math.-11	Algebra	7	6	1			
Math.-18	Analytical Geometry	4	6	1			
Math.-25	Differential Calculus				10	6	1
Phy.-5-6	Physics	11	4	1	10	4	1
Phy.-8	Physics Lab.				10	1	3
T. E.-31-32	Fabric Design	7	1	3	10	2	3
Mil.	Military	11	5	1	10	5	1

PRE-JUNIOR, Textile Engineering

Chem.-21-22	Organic Chemistry	11	4	1	10	4	1
Chem.-23-24	Organic Lab.	11	2	2	10	2	2
Dr.-41a	Kinematics of Mechanism	11	4	1			
Dr.-44	Kinematics of Mechanism				10	2	3
Eng.-31	English Literature	11	2	1	10	2	1
Math.-21	Solid Analytical Geometry	4	6	1			
Mech.-26	Elem. Appl. Mechanics				10	4	1
T. E.-1-2	Yarn Manufacture, Theory	7	6	1	10	5	1
T. E.-33-34	Fabric Design	7	2	3	10	1	3
Mil.	Military	11	5	1	10	5	1

JUNIOR, Textile Engineering

Eng.-32	English Literature	11	4	1			
Ex. E.-73-74	Steam, Fuels, & Gas Engine Laboratory	7	2	3	10	2	3
Ex. E.-77	Heat Engines & Ther.	7	5	1	10	4	1
T. E.-3-4	Yarn Manufacture	11	4	1	10	4	1
T. E.-13-14	Knitting	11	1	3	10	1	3
T. E.-17	Dyeing, Theory				10	3	1
T. E.-22-23	Dyeing Lab.	11	1	3	10	1	3
T. E.-27-28	Fabric Analysis	11	1	3	10	1	3
T. E.-41-42	Weaving Theory	11	3	1	10	3	1
Mil.	Military (Elective)	11	5	1	10	5	1

SENIOR, Textile Engineering

Senior classes start about Aug. 30, to allow for Military Camp. Those students not attending Military Camp are required to work during this period.

Abbrev.	Subject	1st. Term W	T	H	2nd. Term W	T	H
Co-op.-50-51	Corporation Finance	7	3	1	10	3	1
E. E.-2	Elem. Applied Electricity	7	6	1			
E. E.-3a	Elect. Engineering Lab.				10	2	3
Ex. E.-80	Hydro-Electric Power Plants				10	3	1
T. E.-18	Dyeing Theory				10	3	1
T. E.-24	Dyeing Lab.				10	1	3
T. E.-37-38	Jacquard Design	7	2	3	10	1	3
T. E.-43	Weaving Theory	7	4	1			
T. E.-53-54	Weaving Practice	7	1	3	10	2	3
T. E.-71-72	Mill Engineering	7	2	1	10	2	1
T. E.-75-76	Mill Engineering Lab.	7	1	3	10	2	3
Mil.	Military (Elective)	7	5	1	10	5	1

SPECIAL COURSES OF INSTRUCTION

Co-op. 1 and 2. Co-ordination.

For all first year students in General Engineering and Textile Engineering.

Written and oral discussions by the students based on observation and experience gained through their connection with the outside work. Lectures and reports on trips of inspection to industrial plants.

One hour a week, first and second semesters.

Co-op. 7 and 8. Accounting and Commercial Law.

For second year students in General Engineering.

A study of the principles of accounting by combined lecture and problem method. A study of law and legal cases bearing particularily upon business.

Four hours a week, first and second semesters.

Co-op. 40 and 41. Production Methods.

For fourth year students, second semester and fifth year students, first semester in General Engineering. Principles of management, factory organization, labor problems, safety and welfare, wage systems, industrial locations, time and motion study, etc. Also practical problems in modern production. Three hour per week, first and second semesters.

Co-op. 50 and 51. Corporation Finance.

For fifth year students in General Engineering and Textile Engineering.

Methods by which corporations are organized and financed and the principles that underlie corporate management.

Three hours a week, first and second semesters.

DEPARTMENT OF DRAWING

Professors Coolidge, Gilbert, Peek, Billmyer, Genz, Sellman, and Webber.

General Statement

The Department of Drawing is housed on the top floor of the new wing added to the Mechanical Building this year. The drafting rooms are splendidly lighted and equipped with modern facilities.

The Department of Drawing offers courses in Engineering Drawing which are intended to be useful to the student in his engineering practice in the particular branch of engineering which he elects from the several courses offered by the school.

A standard drafting room practice is maintained throughout the various courses of instruction. This standard drafting room practice is the average of standards maintained by over 130 drafting rooms in the largest manufacturing concerns in the United States. The meager time available for the courses in drawing does not as a rule develop the student to that perfection of manual skill and dexterity which would classify him as a mere draftsman. This can be attained only by constant practice under the perfected system found in reputable and commercially established concerns.

Throughout the various courses in drawing however, students are required to acquire a certain standard of technique in order that they will be qualified to supervise a drafting room as an executive in charge of the whole or part of the work.

Special effort is constantly made to emphasize the fundamental points and features in good design. Students are presented only such problems to analyze over the drawing board as will occur in good engineering practice. Bad habits acquired from bad examples are serious handicaps to young engineers assuming responsibility in engineering work after graduation.

TABULATION OF SUBJECTS TAUGHT IN THE DRAWING DEPARTMENT

FRESHMAN YEAR

First Term

Symbol	Subject	Hrs. Per W'k Class	Draft'g	Equv.
	(All Courses Except Commerce)			
Dr. 15	Applied Technical Drawing	2	3	3.
Dr. 17	Applied Technical Drawing (Arc.)	2	3	3.

Second Term

Symbol	Subject	Hrs. Per W'k Class	Draft'g	Equv.
	(All Courses Except Com. & Arc.)			
Dr. 16	Applied Technical Drawing	2	3	3.

SOPHOMORE YEAR

First Term

Symbol	Subject	Hrs. Per W'k Class	Draft'g	Equv.
Dr. 27	Machine Drawing (E. Ch., E.E., M.E., T.E,, Co-ops.)		3	3.

Second Term

	Subject	Hrs. Per W'k Class	Draft'g	Equv.
Dr. 28	Machine Drawing (Jr. E. Ch., E.E., M. E., T.E., Co-ops.)		3	3.

JUNIOR YEAR

First Term

	Subject	Hrs. Per W'k Class	Draft'g	Equv.
Dr. 41	Kinematics of Mechanism (T.E.)	3		7.5
Dr. 47	Kinematics of Mechanism (M.E., Co-ops.)	2	6	11.

Second Term

	Subject	Hrs. Per W'k Class	Draft'g	Equv.
Dr. 41a	Kinematics of Mechanism (E.E.)	3		7.5
Dr. 44	Kinematics of Mechanism—T. E.		3	3.
Dr. 48	Kinematics of Mechanism (M.E., Co-ops.)	1	5	7.5

COURSES OF INSTRUCTION

Drawing 15. Applied Technical Drawing.

Professors Gilbert, Peek, Billmyer and Webber.

Freshmen in E.Ch., E.E., M.E., T.E., and Co-op. First term, two hours class room and three hours drafting.

Instruction in the freshman year is devoted to training the student in elementary projection, the analytical and synthetical treatment of points, lines, and planes having predefined relations, the delineation of lines and surfaces obtained from the intersection of other surfaces or bodies, developments of surfaces, etc. The subject matter mentioned is usually treated as a course in so called Descriptive Geometry in which auxiliary revolving planes, dihedral angles, and other highly complex methods are unnecessarily employed to present to the student a fundamentaal training in a branch of Engineering Drawing which is the science of all drawing. The methods now employed in teaching Applied Technical Drawing are such that they can be readily applied in engineering practice without the cumbersomeness of the usual academic technicalities. Standard finished pencilled drawing only are required.

Drawing 16. Applied Technical Drawing.

Professors Gilbert, Peek, Billmyer, and Webber.

Freshmen in E.Ch., E.E., M.E., T.E., and Co-op. Second term, two hours class room and three hours drafting.

A continuation of Drawing 15.

Drawing 17. Applied Technical Drawing.

Professors Gilbert, Peek, and Webber.

Freshmen in Architecture. First term, two hours class room and three hours drafting.

Similar to Drawing 15 with specially selected problems to emphasize the essentials applied to architecture.

Drawing 27. Machine Drawing.

Professors Billmyer, Genz, and Sellman.

Prerequisites Dr. 15 and Dr. 16.

Sophomores in E.Ch., M.E., T.E., Sp. T.E. 1., and Co-op.

First Term, three hours drafting.

Instruction in the Sophomore year is confined to detail and assembly of shop working drawings of standard types of machines for the production of power and various manufacturing. The student is instructed thoroughly in the correct use and care of all his instruments, in the technique of tracing on tracing cloth, and in the duplication methods of the various photographic processes including blue printing, brown printing, and white printing from Van Dykes.

Drawing 28. Machine Drawing.

Professors Billmyer, Genz, and Sellman.

Prerequisites Dr. 15, 16, and 27.

Sophomores in E.E., M.E., T.E., Sp. T. 1, Co-op., and Juniors in E.Ch. Second term, three hours drafting.

A continuation of Drawing 27.

Drawing 41. Kinematics of Mechanism.

Professor Sellman.

Prerequisites Dr. 27 and Dr. 28.

Juniors in T.E., first term, three hours class room.

This course deals with the motions of various mechanisms and their parts and includes an investigation of the various types of gears; the design of plate and cylindrical cams for variable motions; belt and chain transmissions; epicyclic or planetary transmissions; various linkages for various combinations applied to the reciprocating engine, reversing gear, reducing and pantographic motions, quick returns applied to machine tools, and construction of velocity and acceleration diagrams by vector and instant center methods; etc.

Drawing 41a. Kinematics of Mechanism.

Professor Genz.

Prerequisites Dr. 27 and Dr. 28.

Juniors in E.E., second term, three hours class room.

Similar to course described in Drawing 41.

Drawing 44. Kinematics of Mechanism.

Professor Sellman.

Prerequisite: Dr. 41.

Juniors in T.E., second term, three hours drafting.

Problems in this course to be worked out on the drawing board are specially selected from mechanisms incorporated in the design of textile machines and include gear teeth profiles, cams, linkage arrangements, etc.

Drawing 47. Kinematics of Mechanism.

Professors Billmyer, Sellman, and Webber.

Prerequisites Dr. 27 and Dr. 28.

Juniors in M.E., and Co-op, first Term, two hours class room and six hours drafting.

Students in Mechanical Engineering in their Junior year are instructed in the kinematics of various mechanisms. It includes on the pencilled drawings developments of theoretical profiles of cycloidal and involute gear teeth applied to the usual types of gears; working drawings of bevel gears; spiral gears; worm gears; plate and cylindrical type cams; velocity diagrams of a shaper and other machine tools; rubbing speed and acceleration diagram for important parts of the reciprocating types of steam and gas engines by the application of the instant center method; etc.

Drawing 48. Kinematics of Mechanism.

Professors Billmyer, Sellman, and Webber.

Prerequisite Dr. 47.

Juniors in M.E., and Co-op, second term, one hour class room and five hours drafting.

A continuation of Dr. 47.

DEPARTMENT OF ELECTRICAL ENGINEERING

Professors Fitzgerald, Seidell, Wehle, Ellis, Ostergren and Roblee, Messrs. Eddy and Gooch.

General Statement

The Electrical Engineering Department has for its object the training of young men to be industrious and clear thinking, and to equip them with the scientific and practical knowledge necessary for the successful practice of their profession as Electrical Engineers.

The course of study is planned to give comprehensive training in the fundamental sciences of Chemistry, Physics, Mathematics and Applied Mechanics. Adequate training is also given in the scientific and applied aspects of the several important branches of engineering other than electrical, such as Constructive Materials, Steam Engineering, Hydraulics, Hydraulic Machinery and Structures.

The electrical subjects are so planned as to give thorough instruction in the fundamental principles of the various branches of applied electricity. During the senior year some of the more important applications of electricity are included in the course of study with a view to showing the application of the principles rather than attempting to produce specialists in that particular branch.

Parallel with the theoretical work are carefully planned laboratory courses beginning with the first year in Chemistry and continunig throughout the four years in the various sciences and engineering branches studied. The laboratory work is so conducted as to enable the student to verify theory in the performance of fundamental experiments, and to develop in the student the powers of accurate observation and initiative.

EQUIPMENT

The lecture rooms and laboratory of the Electrical Engineering Department are on the second and third floors of the Electrical Building. Additional space was secured during the year 1920-21 by the withdrawal of the Drawing Department from the third floor to another building.

The laboratory is supplied with three phase power at 60 cycles and 220 volts. Direct-current power is supplied from three sources, one motor-generator set consisting of a 17.5 kilowatt compound generator driven by a 25 horsepower, 220 volt, three phase induction motor; two 30 kilowatt compound generators driven by a 90 horsepower, 2200 volt, three phase synchronous motor; and approximately 25 kilowatts from a motor driven generator at the new power plant. The two 30 kilowatt generators can be used for tests on the parallel operation of shunt or compound generators, for opposition tests of dynamos, or as a balancer set for the three wire system of distribution.

The laboratory contains the folowing apparatus: a 25 kilowatt split-pole, double-current generator and a 10 kilowatt double-current generator, both built in the school shops; a number of shunt and compound continuous current generators and motors; two 5 kilowatt three phase alternators or synchronous motors; one 3 horsepower, 3 phase induction motor; two 5 horsepower, 3 phase induction motors; two single-phase motors; one 20 horsepower three-phase induction motor; one 15 horsepower three-phase induction motor; a 2-kilo-

watt booster set for continuous currents; two 3-kilowatt transformers arranged for phase transformation; a constant-current transformer; three 1-kilowatt transformers arranged for star and delta connection on three-phase and six-phase circuits; a 2-kilovolt-ampere, 50,000 volt, portable truck-type testing outfit for insulation testing; a mercury arc rectifier; a Tungar rectifier; condensers aggregating several hundred microfarads capacity, a large number of electrical measuring instruments, proney brakes, spring balances, rheostats and other pieces of laboratory apparatus for the convenient and accurate performance of the usual laboratory experiments. There have also been added two 7.5 kilovolt-ampere synchronous generators of the revolving field type with special armature windings so as to obtain 2, 3, 6 and 12 phase connections. Each generator is supplied with two additional rotors and by their use the machines can be transformed into squirrel-cage or wound-rotor induction motors. A 10-kilowatt rotary converter is of the special educational type with the usual features of a commercial machine such as end-play and speed-limiting devices. This machine is supplied with two 5-kilowatt-ampere transformers, and by means of special armature connections and special taps on the transformer windings it can be used as a single, two or three phase converter.

In addition to the above the electrical machinery of the new power plant is available for experimental work.

A Kelvin hekto-ampere balance and a potentiometer with certified resistances and a standard cell are a portion of the apparatus available for calibration work.

The photometer room is equipped with a Lummer-Brodhun screen; a Sharp-Miller illuminometer for determining the illumination of streets and buildings, a 72-inch Globe Photometer and a foot-candle meter.

A complete equipment of lamps and fixtures has been installed in the laboratory by local jobbers to give examples of the various methods of lighting factories and offices. Practical tests can thus be made to solve various problems of industrial lighting.

The laboratory also contains an oscillograph equipped with two measuring loops and used for the observation of voltage and wave forms and their phase displacement. This machine is also equipped for observing transient phenomena due to disturbances on transmission lines or the phenomena which attend the growth or decay of currents in circuits at the time of closing or opening the switch supplying that circuit. There is also in use an improved lecture-room type oscillograph making it possible to throw waves on a screen for lecture room demonstration.

The laboratory also contains a model of the common battery telephone exchanges arranged for convenient inspection and testing and also various parts of telephone equipment mounted separately to enable detailed study of the various parts of a telephone exchange.

There are being added during the year 1920-21 many additional meters and machines.

All machines in the laboratory have individual circuits going to a common switchboard making it possible to connect a machine to any source of power or to any other machine in the laboratory by simply plugging in on the board.

RADIO STATION

The radio apparatus is housed in a separate room built into the upper portion of the power plant, from the chimney of which various aerials are strung. The station is equipped with modern apparatus in every respect and is probabaly as fine an experimental station as exists in the South. A 2KW panel set supplies the principal transmitting power and is capable of transmitting to all parts of the United States. This set is fitted with automatic and self-starting features for all its operations and is controlled entirely by push button switches located at a distance. A 1 KW auxiliary set is used for local and short wave work. Even with this, communication for 1000 miles is easily possible. The receiving apparatus is particularly complete, including the latest regenerative audion receiver for amateur wave-lengths and complete DeForest panels used with the large aerial for trans-Atlantic and other long distance reception. Vacuum tube detectors and amplifiers are used throughout. A small radio telephone transmitting and receiving set is used for communication with local amateurs suitably equipped.

THE COURSE IN ELECTRICAL ENGINEERING

FRESHMAN YEAR

See page 54.

SOPHOMORE YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Dr. 27	Machine Drawing		3	3.
Eng. 21	American Literature	3		7.5
Math. 21	Analytic Geometry	2		5.
Math. 25	Calculus	3		7.5
M. E. 11(b)	Machine Shop		3	3.
Met. 21	Ferrous Metallurgy (or C. E. 21)	2		5.
Phys. 9	Physics	4		10.
Phys. 13	Physics Laboratory		1.5	2.
Mil. 3	Military Instruction		5	5.
	Total..	14	12.5	48.

Second Term

C. E. 21a	Plane Surveying (or Geol. 1a)	1	3	5.5
Dr. 28	Machine Drawing		3	3.
Eng. 24	Political Economy	3		7.5
Math. 26	Calculus	5		12.5
Phys. 10	Physics	4		10.
Phys. 14	Physics Laboratory		3	4.
Mil. 4	Military Instruction		5	5.
	Total..	13	14	47.5

JUNIOR YEAR

Military Instruction is optional for Modern Language in the Junior year.

First Term

Abbrev.	Subject		Hrs. Per W'k Class	Lab.	Equv.
E. E. 7	Principles of Electrical Engineering		3		7.5
Eng. 31	English Literature		3		7.5
Ex. E. 21	Calibration Laboratory			3	4.
Ex. E. 76	Power Plants		2		5.
Mech. 31	Applied Mechanics		3		7.5
Mech. 41	Mechanics of Materials		2		5.
M. L. 1 M. L. 7 M. L. 13	German French Spanish	one required	3		7.5
Phys. 11	Physics		3		7.5
Phys. 15	Physics Laboratory			3	4.
	Total..		19	6	55.5

Second Term

Dr. 41a	Kinematics of Mechanism		3		7.5
E. E. 8	Principles of Electrical Engineering		5		12.5
E. E. 16	Electrical Engineering Laboratory			6	8.
Eng. 32	English Literature		3		7.5
Ex. E. 52	Hydraulic and Materials Laboratory			3	4.
Math. 35a	Differential Equations		3		7.5
M. L. 2 M. L. 8 M. L. 14	German French Spanish	One required	3		7.5
	Total..		17	9	54.5

SENIOR YEAR

Military Instruction is optional for Hydraulics and Structures in the first and second terms of the Senior year.

First Term

Abbrev.	Subject		Hrs. Per W'k Class	Lab.	Equv.
C. E. 33	Hydraulics		3		7.5
E. E. 9	Alternating Current Machinery		5		12.5
E. E. 31	Electrical Design			5	5.
E. E. 17	Electrical Engineering Laboratory			6	8.
E E. 27	Seminar		2		5.
Ex. E. 71	Fuels Laboratory			4	4.
Ex. E. 77	Heat Engines and Thermodynamics		3		7.5
M. L. 3 M. L. 9 M. L. 15	German French Spanish	One required	3		7.5
	Total..		16	15	57.

Second Term

C. E. 52	Structures		3		7.5
E. E. 10	Alternating Current Machinery		5		12.5
E. E. 14	Electric Railways		2		5.
E. E. 18	Electrical Engineering Laboratory			6	8.
E. E. 30	Electrical Transmission of Power		3		7.5
Ex. E. 80	Hydro-Electric Power Plants		2		5.
Ex. E. 84	Engine Laboratory			4	4.
M. L 4 M. L. 10 M. L. 16	German French Spanish	One required	3		7.5
	Total..		18	10	57.

Courses of Instruction

E. E. 2. Applied Electricity.

Professors Wehle, and Ostergren.

Prerequisite, Physics 11 (Physics 6 for T.E., Seniors). Parallel E. E. 3a.

Senior, C.E., E.Ch., and T.E., second term, three hours.

A course of recitations covering the fundamental principles and characteristics of direct and alternating current machines.

E. E. 3 and 3a. Electrical Engineering Laboratory.

Professors Ostergren, and Roblee; and Mr. Gooch.

Parallel E. E. 2 and E. E. 5.

E. E. 3. Senior M. E., first term, three hours.

E. E. 3a. Senior C.E., E.Ch., and T.E., second term, three hours.

A course consisting of the experimental determination of the characteristics, efficiency and regulation, of direct and alternating current machines. A written report is required on each experiment covering the method of procedure and the results obtained.

E. E. 5. Applied Electricity.

Professors Seidell, Ostergren, and Roblee.

Prerequisite, Physics 11. Parallel, E. E. 3.

Senior M. E., first term, three hours.

A course devoted to the study of the principles of construction and operation and the industrial applications of direct and alternating current apparatus and machines.

E. E. 7. Principles of Electrical Engineering.

Professors Fitzgerald, Seidell, Wehle, and Ostergren.

Prerequisites, Physics 10 and Math. 26.

Junior E. E., first term, three hours.

A course devoted to the study of the laws and properties of electric and magnetic circuits, and the elementary principles of the construction of direct current machines.

E. E. 8. Principles of Electrical Engineering.

Professors Fitzgerald, Seidell, and Wehle.

Prerequisite, E. E. 7. Parallel, E. E. 16.

Junior E. E., second term, five hours.

A continuation of E. E. 7 and consisting of recitation and problem work devoted to the principles of construction and performance of direct-current machinery. The latter part of this course is given to the study of variable currents and alternating-current circuits.

E. E. 9. Alternating Current Machinery.

Professors Fitzgerald and Seidell.

Prerequisite E. E. 8. Parallel, E. E. 17.

Senior E. E., first term, five hours.

A course consisting of recitations and problem work devoted to the study of single and polyphase systems and the construction and the operating characteristics of the static transformer and the synchronous generator.

E. E. 10. Alternating Current Machinery.

Professors Fitzgerald, and Seidell.

Prerequisite, E. E. 9. Parallel, E. E. 18.

Senior E. E., second term, five hours.

A continuation of E. E. 9, and consisting of recitations and problem work devoted to the study of the construction and the operating characteristics of polyphase and single-phase motors and rotary converters.

E. E. 14. Electric Railways.

Professor Seidell.

Senior E. E., second term, two hours, Parallel, E. E. 10.

A course consisting of recitations and problem work devoted to the study of modern electric traction covering construction, equipment and operation of the different types of roads.

E. E. 16. Electrical Engineering Laboratory.

Professors Ellis, Ostergren, and Roblee; Messrs Eddy and Gooch.

Junior E. E., second term, six hours. Parallel, E. E. 8.

A course consisting of the experimental determination of the characteristics, efficiency and regulation of direct current generators and motors. A preliminary report written in class at certain assigned hours is required on each experiment as well as a final report covering in detail the results and conclusions derived from the experiment.

E. E. 17. Electrical Engineering Laboratory.

Professors Ellis, and Ostergren, and Mr. Gooch.

Senior E. E., first term, six hours, parallel, E. E. 9.

A course consisting of experiments on single and three-phase circuits and the characteristics, efficiency and regulation of transformers and synchronous generators. A preliminary report written in class at certain assigned hours is required on each experiment as well as a final report covering in detail the results and conclusions derived from the experiment.

E. E. 18. Electrical Engineering Laboratory.

Professors Ellis, and Ostergren.

Senior E. E., second term, six hours. Parallel, E. E. 10.
A course consisting of the experimental determination of the characteristics, efficiency and regulation of polyphase and single-phase motors and rotary converters. A preliminary report written in class at certain assigned hours is required on each experiment as well as a final report covering in detail the results and conclusions derived from the experiment.

E. E. 21. Telegraphy.

Profesors Wehle, and Ostergren, and Mr. Eddy.

Junior Signal Corps, first term, two hours. Parallel Physics 11.
A course covering open and closed circuit Morse telegraph systems, bridge and polar duplex systems, quadruplex telegraphy, and the various types of apparatus used to accomplish multiplex telegraphy. Consideration is given to the construction and maintenance of pole lines and to the economic problems entering into the choice of material and apparatus.

E. E. 22. Thermionic Valves.

Professors Wehle, and Ostergren.

Junior Signal Corps, second term, two hours.
A course on the theory and operation of vacuum tubes as amplifiers, oscillilators, and detectors, with special regard to their use in radio circuits.

E. E. 23. Telephone Engineering.

Professor Wehle and Mr. Eddy.

Senior Signal Corps, first term, two hours class work and three hours laboratory. Parallel E. E. 9.
A course covering the principles of the various pieces of apparatus that go to make up the modern telephone plant and a consideration of modern applications thereof. The laboratory work consists of the inspection and testing of a model telephone exchange and the establishment of complete local, central office, and trunk telephone circuits, using individually mounted relays and instruments which the students are required to connect.

E. E. 24. Radio Engineering.

Professor Wehle, and Mr. Eddy.

Senior Signal Corps, second term, two hours class work and three hours laboratory.
A course covering the theory of oscillating circuits as applied to radio work, including the special characteristics of antennas as radiators of electric waves, covering the design and use of the ordinary radio instruments and devices and the theory involved in radio measurements. Recent advances in the art are discusses and considerable time spent in the study of radio telephony.

E. E. 27. Seminar.

Professor Wehle.

Senior E. E., first term, two hours.
A course consisting of the delivery and discussion of technical papers in class. These papers will deal with subjects of timely interest in electrical engineering.

E. E. 30. Electrical Transmission of Power.

Professor Seidell.

Parallel, E. E. 10.
Senior E. E., second term, three hours.
A course consisting of recitation and problem work devoted to the study of the construction and operating characteristics of transmission lines, and the distribution of power.

E. E. 31. Electrical Design.

Professor Seidell.

Parallel E. E., 9.
Senior E. E., first term, five hours.
This course covers the complete electrical design of compound generators, transformers, alternators, and induction motors. Calculations are made and characteristic curves of each machine predetermined.

E. E. 41. Elements of Direct Currents.

Professor Roblee.

Motor Transport Corps, first term, two hours class work and three hours laboratory.
A practical course consisting of recitations, problems, and experiments on the principles of electricity, and the operation of various types of motors and generators. A few experiments in trouble shooting are given. Students are given complete charge of the experiments and are required to write a final report covering in detail the results.

E. E. 42. Elements of Alternating Currents.

Professor Roblee.

Motor Transport Corps, second term, two hours class work and three hours laboratory.
A practical course devoted to the study of the principles of alternating current circuits and the various types of motors and generators. Experiments on alternating current circuits, motors, generators, and transformers are given and a report required for each, covering in detail the results obtained and conclusions drawn.

DEPARTMENT OF ENGLISH

Professors Wallace, Perry, Kirk, Armstrong, Farris, and McDaniel, Messrs. Grether, Fitzpatrick, Cottle, and Neff.

General Statement.

This course in English begins with the Freshman class, and extends through the Junior class, a period of three years.

The work of the department is required of all regular students, and its importance as the avenue of approach to all knowledge is kept constantly in mind. Particularly is its value to technical students recognized and enforced; first, as supplying the engineer with that equipment of direct, accurate, and vigorous expression necessary to his success in life; and second, as co-ordinating with his scientific training the equally important cultural development which is justly demanded of the educated man today.

The purposes of the courses are utility, which predominates in the first year and in half of the second; and culture, which is the chief end sought as the student progresses in his work. It is to be recognized and stressed, however, that both purposes are considered fundamental and correlative and are earnestly sought from beginning to end of the course.

Courses of Instruction

English 11. Composition and Rhetoric.

Professors Wallace, Perry, Kirk, Armstrong, Farris, McDaniel; Messrs. Grether, Fitzpatrick Cottle, and Neff.

Freshman, first term, three hours.

This course consists, primarily, of a careful study and application of Rhetorical principles, including the structure of the paragraph and the sentence, a correct and effective use of words, punctuation, letter-writing and forms of discourse. The subject of composition is considered entirely from the point of view of construction, and constant effort is made to bring the student to apply in his own compositions the principles that are studied in the classroom. Composition work during the first term is devoted mainly to Description and Narration. The work in this course is closely adjusted to that in English 15.

Text-books: Lomer and Ashmun's, "The Study and Practice of Writing English," Penniman's "Common Words Difficult to Spell" "Atlantic Monthly" and an approved dictionary.

English 12. Composition and Rhetoric.

Professors Wallace, Perry, Kirk, Armstrong, Farris, and McDaniel; Messrs Grether, Fitzpatrick, Cottle, and Neff.

Freshman, second term, three hours.

This course is in large measure a continuation of English 11. The work of this term, however, is devoted mainly to study and practice of Exposition. A special effort is made throughout the course to relate the work in composition to the present and future needs of the student as a young engineer; and in the study of matter and method the needs and requirements of the scientific departments of the School are kept constantly in mind.

Text-books: "Lomer and Ashmun's," "The Study and Practice of Writing English;" Penniman's "Common Words Difficult to Spell," "English, Science, and Engineering"; reference books and periodicals in the library.

English 15. Theme-Writing and Speaking.

Professor McDaniel; Messrs. Grether, Fitzpatrick, Cottle, and Neff.

Freshman, first term, one hour.

The aim of this course is to teach correctness and clearness in the expression of thought, and to stimulate the powers of observation, imagination, and reflection in the student. Sixteen themes on assigned topics are required of the student during the term, and attendance upon a consultation with the instructor one hour a week. No theme is accepted which is notably defective in grammar or spelling, and no student will be allowed to pass the course until he has acquired correctness in these particulars and reasonable facility in the application of rhetorical principles.

English 16. Theme-Writing and Speaking.

Professor McDaniel; Messrs. Fitzpatrick, Cottle, and Neff.

Freshman, second term, one hour.

This course is a continuation of English 15. Fewer and longer themes are required. The use of the library, outline making, thought organization, and oral presentation of thought are taught. The weekly consultations are continued.

At the close of the year a contest is held in which a gold medal is offered for excellence in the preparation and delivery of orations. Students will be qualified to enter this contest by the general excellence of their work in this course.

Courses 15 and 16 may be completed in one year; but if the student fails to pass the work satisfactorily, he may be required to repeat it as often as is necessary until he is able to write correctly. Students in more advanced courses whose work in composition is unsatisfactory will be required to take this course in whole or in part.

Freshman Parallel Reading.

All Freshmen are required to read each term a designated number of books as parallel reading and to present brief written reports of these books. The volumes appointed for this purpose cover a wide range of type and subject matter. They are, in the main, supplied by the School Library, though the larger collection of the Atlanta Carnegie Library is also made available for the use of all Tech students.

English 10. Professor McDaniel.

Freshman, second term, three hours.

For the benefit of such students as give evidence of insufficient preparation to enable them to continue their work in English 12,

a review of fundamental rhetorical principles and practice is conducted during the second term of the Freshman year.

Text-book: Foerster and Steadman's "Sentences and Thinking."

English 21. American Literature.

Professors Wallace, Perry, King, Armstrong, Farris, and McDaniel and Messrs. Grether, Fiezpatrick, and Cottle.

Sophomore, first term, three hours.

This course consists of a brief survey of American literature, from Irving to "O. Henry." The primary aim of the course is to give the student an appreciation of the meaning and worth of the literature of America; to familiarize him with representative work of American writers; and to cultivate in him a sound critical faculty. As a secondary aim, a careful study is made of literary types, methods, and conventions, in preparation for the study of English literature in the Junior year.

Text-book: Pattee's "Century Readings in American Literature."

English 24. Economics.

Professors Wallace, Perry, Kirk, Armstrong, and McDaniel; Messrs. Grether, Fitzpatrick, and Cottle.

Sophomore, second term, three hours.

As the School has no department of political or social science, a brief course in Economics is given by the English Department. Ely's "Outlines of Economics" is used as a text-book, supplemented by lectures, papers upon various economic subjects, and discussions. The aim of this course is to familiarize the student with economic theories, to indicate the laws underlying the complex fabric of modern commercial and social systems and to give him an intelligent apprehension of the nature and meaning of the great economic problems of the age. An essay on some approved economic subject is required of each student.

Text-book: Ely's "Outlines of Economics."

Sophomore Parallel Reading.

Of all Sophomores, during each term, there is required for parallel reading a designated number of books, similar to the course in parallel reading required of the Freshmen, except that in this case the books are selected from the work of American authors.

English 31. English Literature.

Professors Wallace, Perry, Kirk, Armstrong, Farris, and McDaniel.

Junior, first term, three hours.

The course in English Literature, given throughout the Junior year, offers a study of literature itself rather than of texts about literature. It recognizes that a literary work is not merely a work of art, but an expression of the personality of its author and through him, as the voice and exponents of his age, a record of the ideas and ideals of a section of the nation's life. The course presents a

general survey of English letters, from Chaucer to Stevenson. During the first term this survey extends through the Eighteenth Century and the beginnings of the Romantic Movement. The course is conducted by lectures, oral and written quizzes, and written reports.

Text-books: Moody and Lovett's "History of English Literature"; Snyder and Martin's "A Book of English Literature"; and selected plays of Shakespeare.

English 32. English Literature.

Professors Wallace, Perry, Kirk, Armstrong, Farris, and McDaniel.

Junior, second term, three hours.

This course continues the survey of English literature from Wordsworth through the Nineteenth Century. It is similar in aim and scope to English 31.

Text-books: Same as above.

DEPARTMENT OF EXPERIMENTAL ENGINEERING

Professors King, Howell, Mason and McEver, Messrs. R. L. Russell and F. G. Thomas.

General Statement

The object of courses in this department is to enable the engineering student to recognize and apply such natural forces and materials as are adapted to his uses.

In order that he may be capable of intelligently and skillfully designing, constructing and supervising all kinds of machinery, it is necessary that he should pursue thorough and extensive theoretical courses which are of primary importance in according mental discipline not to be derived from practical research. The latter is made to go hand in hand with the former, for it is believed that, from continued practical applications of theoretical conclusions, a broader and more tangible conception of their truths may be derived. It is not, then, at the expense of the abstract mathematical law that time is given to show how it may be involved in the construction of the simplest machine, for not only is a new and suggestive meaning thereby given to the various contrivances of the mechanism, but an insight into the whole significance of the law itself is gained, which can be acquired only by observing practical applications.

To explain theoretical principles, however, is not the only value of the experimental work of the department. If the student desires to go from college to the manufacturing world, it is essential that he should be familiar with working machines, methods of management, and as much of the every-day detail engineering work as it is possible for him to acquire as a supplement to his higher training.

COURSES IN EXPERIMENTAL ENGINEERING

JUNIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Ex. E. 21	Calibration Lab. (E. E., M. E.)		3	4.
Ex. E. 23	Calibration Lab. (Co-op)		6	
Ex. E. 41	Hydraulic Lab. (C. E.)		3	4.
Ex. E. 47	Elem. Mat. Lab. (I. E.)		3	4.
Ex. E. 77	Heat Engines & Thermo. (Co-op)	4		
Ex. E. 76	Power plants (Co-op)	4		
Ex. E. 76	Power Plants (E.E.)	2		5.

Second Term

Ex. E. 52	Hydraulic & Mat. Lab. (E. E., M. E.)		3	4.
Ex. E. 56	Hydraulic & Mat. Lab. (Co-op)		6	
Ex. E. 57	Materials Lab. (C. E.)		3	4.
Ex. E. 76	Power Plants (E. Ch., M. E.)	2		5.
Ex. E. 77	Heat Engines & Thermo. (Co-op)	4		

SENIOR YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Ex. E. 15	Power Plant Operation (I. E.)	1	3	6.5
Ex. E. 71	Fuels Lab. (E.E., M.E., A.E.)		4	4.
Ex. E. 73	Elem Steam Lab. (C.E., E. Ch., T.E.)		4	4.
Ex. E. 73	Elem. Steam Lab. (T. E. Co-op)		3	
Ex. E. 77	Heat Engines & Thermo. (C.E., E. Ch. E. E., T. E.)	3		7.5
Ex. E. 81	Steam and Gas Engine Lab. (Co-op)		7	

Second Term

Ex. E. 72	Steam Engine Lab. (M.E.)		4	4.
Ex. E. 74	Fuels & Gas Engine Lab. (E.Ch. T.E.)		4	4.
Ex. E. 74	Fuels & Gas Engine Lab. (T.E. Co-op)		3	
Ex. E. 78	Adv. Heat Eng. & Thermo. (E. Ch.)	2		5.
Ex. E. 80	Hydro-Elec. Power Plants (E.E., T.E.	2		5.
Ex. E. 80	Hydro-Elec. Power Plants (E.E., T.E. Co-op.)	3		5.
Ex E. 84	Engine Lab. (E.E., A.E.)		4	4.
Ex. E. 86	Gas Engine Lab. (M.E.)		4	4.
Ex. E. 82	Steam & Gas Engine Lab. (Co-op.)		7	
Ex. E. 90	Automobile Lab. (A.E.)		4	4.
Ex. E. 88	Gas Engine Lab. (Co-op.)		6	

Courses of Instruction

Ex. E. 15. Power Plant Operation.

Seniors in Industrial Education, first term, one hour recitation and lecture and four hours laboratory.

This is an abridged course in power plant operation and is intended to give the student a working knowledge of the operation of small power plants and the care of the apparatus usually encountered in such plants. The theory of operation is given in the class

room and is followed by practical work and demonstration in the laboratory. This course is not open to regular engineering students.

Ex. E. 21. Calibration Laboratory.

Prerequisite, Physics 5 and 9.

Ex. E. 21, Juniors in E. E., M. E., first term, three hours.

This course covers the calibration of steam gauges and other pressure measuring devices, thermometers, indicator springs, reducing motions, and planimeters. The use of the steam engine indicator. The testing of lubricating oils and greases.

Ex. E. 23. Calibration Laboratory.

Prerequisite, Physics 5 and 9.

Ex. E. 23, Juniors, Co-ops, six hours, alternate four weeks.

weeks.

This course is an abridgement of Ex. E. 21 and is arranged especially for co-operative students.

Ex. E. 41. Hydraulic Laboratory.

Prerequisite, C. E. 33, or Parallel.

Juniors in C. E., first term, three hours.

The calibration of nozzles and orifices, weirs, water meters of different types, pitot tubes, etc., the testing of pelton water wheels, hydraulic rams, centrifugal pumps, steam pumps, pulsometer, and flow of water in pipes are some of the subjects covered by this course.

Ex. E. 47. Elementary Materials Laboratory.

Prerequisite Mech. 23, or Parallel.

Juniors in Industrial Education, first term, three hours.

This course covers the commercial testing of structural materials. All materials are tested according to standard specifications, and particular stress is laid on the commercial application of such tests. The work covers the testing of structural steel, timber, riveted joints, rope, cable, etc. This course is not open to regular engineering students.

Ex. E. 52. Hydraulics and Materials Laboratory.

Prerequisite, Ex. E. 21, Mech. 41 or 48, Ex. E. 76, or parallel.

Ex. E. 52, Juniors, E. E., and M. E., second term, three hours.

The work covered in this course embraces the testing and calibration of orifices, nozzles, weirs, water meters, pelton wheel, centrifugal pump, etc., and the testing of the strength of materials in tension, compression, cross bending, torsion and shear.

Ex. E. 56. Hydraulics and Materials Laboratory.

Prerequisite Ex. E. 23, Mech. Mat'ls., Ex. E. 76 or parallel.

Ex. E. 56, Junior Co-ops, six hours, alternate four weeks, second term.

This course is an abridgement of Ex. E. 52 and is arranged especially for Co-operative students.

Ex. E. 57. Materials Laboratory.

Prerequisite, Mech. 41, or Parallel.

Juniors in C. E., second term, three hours.

This course covers the testing of strength of materials in tension, compression, torsion, shear, cross-bending, riveted joints and the commercial tests of structural materials.

Ex. E. 71. Fuels Laboratory.

Prerequisites, Ex. E. 76, Ex. E., 21.

Seniors in M. E., E. E., and A. E., first term, four hours.

This course embraces the determination of the calorific values of fuel, proximate analysis of fuels, sulphur determinations, flue gas analysis, steam calorimetry, tests of injectors, boilers and ventilating fans.

Ex. E. 72. Steam Engine Laboratory.

Prerequisite, M. E. 65, M. E. 69, Ex. E. 71.

Seniors in M. E., second term, four hours.

This course includes valve setting, economy tests of steam engines, entropy analysis of steam engines, pulsometer, refrigerating machines, air compressors and the use of dynamometers.

Ex. E. 73. Elementary Steam Laboratory.

Parallel with Ex. E. 77.

Seniors in C. E., E. Ch., T. E., first term, four hours.

Seniors in T. E. (Co-ops).

This is an abridged course in the steam engine laboratory and covers the testing of steam gauges, lubricating oils, valve setting, engine testing, fine gas analysis and boiler trials.

Ex. E. 74. Fuels and Gas Engine Laboratory.

Seniors in E. Ch., T. E., second term, four hours.

Senior in T. E. (Co-ops).

This is an abridged course in these laboratories. The work covers the testing of internal combustion engines, the calorific values of fuels, and of strength of materials.

Ex. E. 76. Power Plants.

Prerequisite, Physics 6, 9, 10.

Juniors in E. E. 1st term, two hours.

Juniors in M. E. and E. Ch., second term, two hours.

Junior Co-ops, second term, alternate four weeks, four hours.

four weeks, four hours.

This course is devoted to the study of power plants and auxiliaries, and the apparatus used in the testing of same. The testing of air machinery, hydraulic machinery, internal combustion engines, refrigeration plants and miscellaneous machinery used by the engineer. Methods of keeping plant records and their interpretation is taken up.

Text book used in 1920-1921, Power Plant Testing by Moyer.

Ex. E. 77. Heat Engines and Thermodynamics.

Prerequisite, Physics 5 and 6.

Seniors in E. E., C. E., E. Ch., and T. E., first term, three hours.

The thermal properties of gases, expansion of gases, the thermal properties of vapors, wet and superheated vapors, the steam engine, steam cycles, losses in steam engines, design and test of steam engines, the steam turbine, condensing machinery, combustion, steam boilers, boiler plant accessories, gaseous fuels, heating and entropy diagrams are treated in this course.

Text-book, 1920-1921, Steam Power Plant Engineering by Gebhardt.

Ex. E. 77. Seniors in Co-op., first term, four hours every other four weeks.

This is an abridgement of the course in Ex. E. 77 described above.

Ex. E. Seniors in E. Ch., first term, two hours.

Prerequisite, Ex. E. 77.

This course is a continuation of Ex. E. 77. Particular stress being placed on the thermodynamic processes and principles.

Text-book used 1920-1921, Practical Thermodynamics, by Cardullo.

Ex. E. 80. Hydro-Electric Power Plants.

Seniors in E. E., T. E., second term, two hours.

Senior Co-ops., second term, four hours every other four weeks.

This course deals with the Hydraulic Engineering only, and covers the fundamental principles of hydraulic motors, water wheels and turbines, typical installations and the cost of water power.

Text-book used 1920-1921, Hydro-Electric Power Stations, by Rushmore and Lof.

Ex. E. 81. Steam and Gas Engine Laboratory.

Prerequisite Ex. E. 23, 76.

Seniors in Co-op. courses, one seven-hour laboratory period per week every other four weeks, first term.

Advanced laboratory work in valve setting, economy tests of steam and gas engines, entropy analysis of steam and gas engines, tests of pulsometers, air compressors, refrigerating machines and complete heat balances of heat engines.

Ex. E. 82. Steam and Gas Engine Laboratory.

Prerequisite, Ex. E. 77, 81.

Seniors in Co-op. courses, one seven-hour laboratory period per week every other four weeks, second term.

A continuation of course Ex. E. 81.

Ex. E. 84. Engine Laboratory.

Prerequisite, Ex. E. 71, Ex. E. 77.

Seniors in E. E., and A. E., second term, four hours.

The work in this course includes the testing of steam engines, valve setting, tests of internal combustion engines, testing of pulsometers and air compressors.

Ex. E 86. Gas Engine Laboratory.

Prerequisites Ex. E. 71, parallel with M. E. 66.
Seniors in M. E., M. E., second term, four hours.
Complete tests of internal combustion engines are given in this course, including heat balances and entropy analysis. The student is required to determine the heating value of his fuels and make an analysis of the exhaust gases.

Ex. E. 86. Gas Engine Laboratory.

Prerequisite Ex. E. 81.
Seniors in Co-op. course, one six-hour laboratory period per week, every other four weeks, second term.
This course is an abridgement of Ex. E. 86 and is arranged especially for co-operative students.

Ex. E. 90. Automobile Laboratory.

Prerequisite all first term A. E. subjects.
Seniors in Automobile Engineering, second term, four hours.
Complete tests of automobile engines are made and tests under running conditions of automobiles and trucks as far as time will permit.

GEOLOGY AND METALLURGY

Professor Dunn.

General Statement

The Department of Geology and Metallurgy does not offer a separate degree, but gives courses which are needed for other degrees offered by the school. The aim, therefore, is to give such courses as will emphasize geologic and metallurgic principles in their application to the engineering fields of other departments. Special efforts are made to bring the student in contact with those publications which are vital forces in his chosen field. Topics for special investigation, and articles for special review are assigned to him, and as many classroom references as possible are made to the literature of this particular field. To impress upon the student the practical side of his work, inspection tours are made, which enable him to see in actual operation the processes discussed in the class room. In every department of the work the aim is to make the student responsible for himself; so that he may learn to attack a piece of work or a problem with the sole purpose of getting out of it, not what this or any other department may require by schedule from him, but what that particular case merits of his best efforts.

Equipment

The equipment consists of the usual office, section room, museum and laboratories. The department has collections as follows: type collections for Mineralogy, Petrography and Geology; working collections for Crystallography, Mineralogy and Petrography; Building

Stones Collection; Metallurgical Products Collection. For use in the class room there is a catalog library of 700 bulletins, prints and papers. The metallography laboratory is equipped with horizontal polishing machines, electric heat treatment furnace, a Bausch and Lomb metallurgical microscope and the necessary accessories for the study of metals and alloys.
Material is being added to the equipment from time to time through regular funds and through the kindness of patrons in the commercial world.

Met. 21 and 21a. Ferrous Metallurgy.

Prerequisite, Chem. 1, 2, 5, 6.

Met. 21. Sophomore, first term, students in E. Ch., C. E., E. E. and M. E., who are not taking C. E. 21.

Met. 21. Sophomore, second term, students in E. Ch., C. E., E. E. and M. E., who have not taken Geol. 1. Two hours.

A course of recitations and lectures covering four sections as follows—(a) Fuels. The work in this section consists of a brief study of the various kinds and the uses of fuels, together with their metallurgical applications. (b) Refractory Materials. The various types of crucibles, casting sands, mortars, and different acids and basic linings for furnaces are studied under this head. (c) Metallurgical Problems relating to Coal, Boilers, Blast Furnaces, etc., are studied. (d) Iron and Steel. No attempt is made to treat this section in detail, but modern steel making practice is taken, with special stress being laid on the Blast Furnace, the Bessemer, Open Hearth and Alloy Steels.
Text-books: Stoughton's "Iron and Steel." Department's Notes on "Fuels, Combustion, Refractories and Related Problems."

Met. 44. Non-Ferrous Metallurgy.

Prerequisite, Chem. 1, 2, 5, 6.
Second term, four hours.
(Given if applied for by a sufficient number of students).

A lecture course, in which the metallurgy of gold, silver, copper and lead is studied, the entire time being put on the modern practice in this country. No attempt is made to grasp the minutiae of the many processes, but each is studied as closely as is required to bring the student to the position where detailed work can be carried on at his pleasure. Extensive use is made of library assignments, trade catalogues and inspection trips.
Text-book Borcher's "Metallurgy."

Met. 56. Alloys and Metallography.

Prerequisite Chem. 1, 2, 5, 6. Met. 21.
Senior M. E. Automobile Engineering Option, second term. two hours.

A course of recitations and lectures dealing chiefly with the theoretical and practical considerations that influence the structure and properties of alloys with special attention to iron and steel and modern heat treatment methods.

Met. 58. Alloys and Metallography Laboratory.

To accompany Met. 56.

Prerequisite Chem. 1, 2, 5, 6. Met. 21.

Senior M. E. Automobile Engineering Option. Second term, three hours.

A laboratory course in alloys dealing chiefly with the micro-structure of iron and steel and the effect of proper and improper methods of heat treatment.

Met. 62. Assaying.

Prerequisite, Chem. 13, 14.

Second term, three hours.

(Given if applied for by sufficient number of students.)

A laboratory course, including a study of slags; fluxing of a limestone and of a siliceous ore; the assay of lead ores, both sulphide and oxide; and the various methods of assays of gold and silver ores.

Text-book: Fulton's "Manual of Assaying."

Geol. 10. Geology.

Prerequisite, Chem. 1, 2, 5, 6.

Juniors in C. E., second term, three hours.

A recitation course, consisting of Dynamical Geology, in which the student studies the forces which are now at work changing the surface of the earth, such as the atmospheric, aqueous and igneous agencies; Structural Geology, a study of earth materials, their past and present forms; Historical Geology, which treats of the earth's life and history as revealed in the sequence of the rock beds. Use is made of the library and field trips as opportunity offers.

Text-book: Cleland's "Geology."

DEPARTMENT OF INDUSTRIAL EDUCATION

For the Training of Teachers of Trade, Industrial and Related Subjects.

The Georgia School of Technology has been selected, by the State Board of Vocational Education, to conduct the Teacher-Training in Trades, industries, and Related Subjects.

The demand for teachers of Vocational Subjects, greatly exceeds the supply. In fact, there has never been, so far, a sufficient number of Manual Training teachers to supply the demand in the United States even though the salary has been, in most cases, higher than in other lines of similar grade.

The Smith-Hughes Act, which became effective July 1st, 1917, provides for Federal aid for the promotion of Vocational Education. The provisions of this act have been accepted by all of the States, and Vocational Education is being promoted. This has opened up a comparatively new field in the United States, for teachers, and the salaries paid are very attractive.

Inquiries concerning this line of work, are solicited by the Department of Industrial Education.

Scheme for the Training of Teachers of Trade, Industrial and Related Subjects Under the Provision of the Smith-Hughes Act.

It is the purpose of the Georgia School of Technology, through its Department of Industrial Education, to train four groups of men for teachers of trades and industries. These will be designated as Groups A. B. C. and D.

Group A. Men who have had trade experience equal at least to two years in excess of the period required to learn the trade and at least an elementary school education or its equivalent may qualify as shop teachers when they have completed a course in specialized training at the Georgia Tech. or at centers best suited for this instruction.

Group B. Men who have had two years' successful trade experience and the equivalent of a high school education, or men who have had two years' training in a technical school of college grade and successful contact with a trade or industry, may pursue a special course in Industrial Education at the Georgia School of Technology. This course will lead to a certificate of proficiency, and will include drawing, English, the more elementary mathematics, professional courses in Industrial Education, and a thorough training in industrial shop work.

Group C. Graduates of the Georgia School of Technology in any of the courses leading to the degree of B.S. in Civil Engineering, Mechanical Engineering, Electrical Engineering, or Textile Engineering, may qualify for teachers of subjects related to trades and industries in which they have had actual experience, upon completion of Industrial Education subjects.

Group D. Regular students at the Georgia School of Technology may pursue a four-year course in Industrial Education leading to the degree of B.S. in Industrial Education. Students in this group who possess no actual trade experience will be required to secure regular employment during the summer months of two years in some trade or industry and in some capacity that will provide actual contact with the work of that trade or industry. This work will be arranged through and be under the direction of the instructor in charge of coordination at the Georgia School of Technology.

A man who qualifies for this degree, and who engages in the teaching of shop or related subjects, should be qualified for a responsible position as principal of a trade or industrial school or as city superintendent of industrial schools.

SCHEDULE OF COURSES IN INDUSTRIAL EDUCATION

For the Training of Teachers Under the Provision of the Smith-Hughes Vocational Education Law.

Special Course Leading to a Certificate of Proficiency.

[illegible] YEAR

[illegible] Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
*Chem	1	Inorganic Chemistry	3		7.5
*Chem.	5	Chemical Laboratory		2	2.
Eng.	11	Rhetoric	3		7.5
Eng.	15	Theme Writing	1		1.
Math.	11	Algebra	3		7.5
Ind. Ed.	21	Applied Psychology	3		7.5
		**Electives in Shop Work		12	12.
Mil.	1	Military Instruction		5	5.
		Total..			50.

Second Term

*Chem.	2	Inorganic Chemistry	3		7.5
*Chem.	6	Chemical Laboratory		2	2.
Dr.	6	Elementary Drawing		7	7.
Eng.	12	Rhetoric	3		7.5
En.	16	Theme Writing	1		1.
Ind. Ed.	24	History of Industrial Education	3		7.5
Ind. Ed.	26	Sanitation and Industrial Hygiene	2		5.
		**Electives in Shop Work		12	12.
Mil.	2	Military Instruction			5.
		Total..			54.5

SECOND YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Math.	15	Trigonometry	6		7.5
Ind. Ed.	31	Industrial Economics	2		5.
Ind. Ed.	33	Methods of Industrial Education	3		7.5
Ind. Ed.	51	Drawing Methods	2		5.
Mil.	3	Military Instruction		5	5.
		**Electives in Shop Work		18	18.
		Total..			48.

Second Term

Ind. Ed.	34	Practice Teaching		4	4.
Ind. Ed.	36	Methods of Industrial Education	1		2.5
Ind. Ed.	53	Reports on Assigned Readings	6		6.
Ind. Ed.	53	Shop Organization	3		7.5
Math.	2	Shop Mathematics	2		5.
		Electives in Shop Work		18	18.
Mil.	4.	Military Instruction		5	5.
		Total..			48.

*Where chemistry is offered as a qualification for entrance, physics will be given in place of chemistry.

**Electives chosen by students will be subject to approval by the faculty, and will be governed by the following consideration: (1) Shop work will be required to supplement the trade experience of the student: (2) Shop work will be required in some additional trade or industry in a sufficient amount to make the student fairly proficient in his second chosen field.

Four-Year Course Leading to the Degree of B. S. in Industrial Education.

FRESHMAN YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem.	1	Inorganic Chemistry	3		7.5
Chem.	5	Chemical Laboratory		2	2.
Dr.	15	Applied Technical Drawing	2	3	3.
Eng.	13	Rhetoric	3		7.5
Eng.	15	Theme Writing	1		1.
Math.	11	Algebra	2		5.
Math.	15	Trigonometry	3		7.5
M. E.	3a	Wood Shop		6	6.
M E.	5	Smithy		3	3.
Mil.	1	Military Instruction		5	5.
		Total..			52.5

Second Term

Chem.	2	Inorganic Chemistry	3		7.5
Chem.	6	Chemical Laboratory		2	2.
Dr.	16	Applied Technical Drawing	2	3	3.
Eng.	12	Rhetoric	3		7.5
Eng.	16	Theme Writing	1		1.
Math.	18	Analytical Geometry	5		12.5
M. E.	4a	Wood Shop		3	3.
M. E.	6	Smithy		3	3.
Mil.	2	Military Instruction		5	5.
		Total..			52.5

SOPHOMORE YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Eng.	21	American Literature	3		7.5
Phys.	5&7	Mechanics and Sound	3	3	11.5
C. E.	21	Plane Surveying	1	3	5.5
Dr.	27	Machine Drawing		3	3.
Math.	21	Analytic Geometry	2		5.
M E.	3e	Wood Shop		3	3.
M. E.	7	Foundry		3	3.
Ind. Ed.	21	Applied Psychology	3		7.5
Mil.	3	Military Instruction		5	5.
		Total..			51.

Second Term

Eng.	24	Political Economy	3		7.5
Phys.	6&8	Heat, Light and Electricity	3	3	11.5
Dr.	28	Machine Drawing		3	3.
Math.	3	Shop Mathematics	2		5.
M. E.	4e	Wood Shop		3	3.
M. E.	8	Foundry		3	3.
M E.	16	Plumbing		3	3.
Ind. Ed.	24	History of Industrial Education	3		7.5
Ind. Ed.	26	Sanitation and Industrial Hygiene	2		5.
Mil.	4	Military Instruction		5	5.
		Total..			52.5

JUNIOR YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Ind. Ed.	31	Industrial Economics	2		5.
Ind. Ed.	33	Methods of Industrial Education	3		7.5
Mech.	23	Elementary Applied Mechanics	3		7.5
Ex. E.	47	Elementary Materials Laboratory		3	3.
M. E.	11	Machine Shop		6	6.
M. E.	17	Sheet Metal Work		6	6.
M. E.	19	Advanced Blacksmithing		3	3.
Arch.	31	Building Construction (Masonry)	1		2.5
Arch.	35	Sanitation of Buildings	1		2.5
Mil.	5	Military Instruction		3	3.
		Total..			46.

Second Term

Ind. Ed.	34	Practice Teaching		4	4.
Ind. Ed.	36	Methods of Industrial Education	1		2.5
Met.	21	Ferrous Metallurgy	2		5.
M. E.	12	Machine Shop		6	6.
M. E.	18	Wood Finishing		3	3.
C. E.	34	Masonry Laboratory		3	3.
T. E.	60	Carding and Weaving	2		5.
T. E.	62	Carding and Weaving		3	3.
Arch.	32	Building Construction (Masonry)	1		2.5
		***Elective	3	7.5	7.5
Mil.	6	Military Instruction		3	3.
		Total..			44.5

SENIOR YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Ind. Ed.	51	Drawing Methods	2		5.
Ind. Ed.	53	Reports on Assigned Readings	6		6.
Ex. E.	15	Operation of Engines	1	3	6.5
T. E.	61	Carding and Weaving	3		7.5
T. E.	63	Carding and Weaving		6	6.
Arch.	63	Building Construction (Carpentry)	1		2.5
		***Elective	6 or	15	15.
Mil.	7	Military Instruction		3	3.
		Total			51.5

Second Term

Ind. Ed.	56	Vocational Guidance	2		5.
Ind. Ed.	58	Shop Organization	3		7.5
E. E.	2	Applied Electricity	2		5.
E. E.	3a	Electrical Laboratory		3	3.
T. E.	64	Carding and Weaving	3		7.5
T. E.	66	Carding and Weaving		6	6.
Arch.	64	Building Construction	1		2.5
		***Elective	6 or	15	15.
Mil.	8	Military Instruction		3	3.
		Total..			54.5

***Electives chosen by students will be subject to approval by the faculty, and will be governed by the following consideration: (1) No student may elect a course unless he has passed the prerequisites for that course; (2) Subjects elected must be either a continuation of or directly related to the courses scheduled as required.

Description of Courses

Ind. Ed. 21. Applied Psychology.

First Year Year Special and Sophomore, first term, three hours. Lectures and recitations.

An elementary study of the general phenomenon of consciousness; sensation, images, affections, and the laws of their grouping in perception, attention, association, memory, etc., with particular attention given to the applications of psychology to industrial education.

Ind. Ed. 24. History of Industrial Education.

First Year Special and Sophomore, second term, three hours. Lectures and recitations.

The characteristic ideals of ancient, mediaeval, and modern educational systems will be briefly considered; but the primary aim of the course will be the study of the rise and development of industrial education. The various apprentice systems under changed industrial conditions since mediaeval times will be reviewed, and the modern conditions that have stimulated interest in trade and industrial schools in the United States will receive careful attention.

Ind. Ed. 26. Sanitation and Industrial Hygiene.

First Year Special and Sophomore, second term, two hours. Lectures and recitations.

The fundamental conditions of health as related to comfort and efficiency, and the attainment of these conditions through proper heating, lighting, and ventilation of factory buildings and the proper housing of the worker. The administration of "first aid," and the control of contagious and infectuous diseases through sanitation and cleanliness, will receive careful attention.

Ind. Ed. 31. Industrial Economics.

Second Special and Junior, first term, two hours. Lectures and recitations.

A continuation of Political Economy (Eng. 24). The study of the special industrial relations of labor, capital, rent, interest, wages, profits, and profit sharing, and the aims of industrial education in the lessening of poverty and crime through industrial preparedness.

Ind. Ed. 33. Methods of Industrial Education.

Second Year Special and Junior, first term, three hours. Lectures and recitations and inspection trips.

A study of the application of the principles of pedagogy to the special field of industrial education; the consideration of courses pursued and methods used in industrial schools in the United States and Europe; and the aim and intent of vocational education under the provisions of the Smith-Hughes Act. Visits will be made to industrial shops and industrial schools.

Ind. Ed. 34. Practice Teaching.

Second Year Special and Junior, second term, four hours practice in actual teaching.

Practice in teaching of industrial shop work will be given in the shops of the school under the direction and supervision of an experienced tradesman and teacher.

Ind. Ed. 36. Methods of Industrial Education.

Second Year Special and Junior, second term, one hour. Lectures and recitations.

A parallel course to Ind. Ed. 34. The problems arising in practice teaching will be considered.

Ind. Ed. Drawing Methods.

Second Year Special and Senior, first term, two hours. Lectures and recitations.

Special value and adaptations of drawing in relation to the field of vocational teaching in industrial school shops.

Ind. Ed. 53. Reports on Assigned Readings.

Second Year Special and Senior, first term, six hours per week.

Conferences, readings, and written reports upon timely topics related to vocational guidance, industrial education, efficiency of shop organizations, etc., with the aim of introducing the student to the literature of his chosen work.

Ind. Ed. 56. Vocational Guidance.

Senior, Second Term, two hours. Lectures and recitations.

A study and an attempt at classification of the individual characteristics and abilities in their relation as determining factors in denoting adaptability to particular occupatons. The course will be closely related to Ind. Ed. 21; and various psychological tests will be discussed and demonstrated as time will permit.

Ind. Ed. 58. Shop Organization.

Second Year Special and Senior, second term, three hours. Lectures, recitations, and shop visits.

This course will consider the fundamentals of shop organization and as many of the specialized "systems" as time will permit. Especial attention will be given to the practical adaptations of these systems in the organization of courses in the industrial school shop.

DEPARTMENT OF MATHEMATICS

Professors Field, Skiles, Morton, Smith, and Stamy, Messrs. Wilson, R. I. White, Boerchel, Elliott, P. L. Armstrong, Driscoll, Holler.

General Statement

Great importance is attached to the study of Mathematics. Primarily the aim of the instruction is to supply the student with a working knowledge of those principles which he needs in the study of engineering; but since the acquisition of a ready and logical mind is quite

as valuable as the ability to use the subject, it is not the purpose to subordinate altogether the logical development of mathematics to the practical side.

Instruction in this department is given by use of text-books, supplemented by oral explanations, lectures and personal oversight of student in working many exercises. It is hoped that the classes may be subdivided into sections numbering from twelve to twenty, thus making possible the individual treatment of students who require it.

Entrance

For entrance to the Freshman Class by examination, it will be necessary to pass the following subjects:

Plane and Solid Geometry: all theorems and one-third of exercises.

Elementary and Advanced Algebra: factors, fractions, involution, evolution, exponents, radicals, solution of quadratic equations by formula and by factoring, simultaneous equations, ratio, proportion, variation, progressions, partial fractions, logarithms, etc.

Do not omit the subject of logarithms, for this is necessary for Freshman Trigonometry.

A review course in Algebra during the last half year of the high school would be of great value to the student. In this course, drill should be given in problems involving exponents, solution of equations, reduction of fractions, radicals, etc. The inability of students to do this part of the later work is the chief cause of discouragement and failure.

Courses of Instruction

Math. 2. Shop Mathematics.

Second Year Specials and Sophomores in Ind. Education.

This course emphasizes the practical industrial applications of mathematical principles with which the students are already familiar.

Lectures and assigned problems. Not open to engineering students.

Math. 3. Algebra.

Prerequisite, Elementary Algebra to Simultaneous Quadratics.

Freshman, first term, three hours.

This course is designed for those students who are conditioned in higher Algebra. It covers the subjects of ratio, proportion, variaiton, progression, partial fractions, logarithms, etc.

Text-book:. Ashton and Marsh.

Math. 7. Geometry.

Prerequisite, Plane Geometry.

Freshman, first term, three hours.

This course is for those students who enter, conditioned in Solid Geometry. It is the usual course with propositions and two-thirds of the exercises.

Text: Wentworth and Smith.

Math. 9. Business Mathematics.

Mr. Holler.

Prerequisite, Arith., Plane Geo., Elementary Algebra.
Given to Freshmen in Commerce first term, three hours per week.
This course gives a thorough review of interest and percentage followed by an application of these principles to investments, insurance, partnerships, exchange, etc.
Rapid Calculation both oral and written are required.
Text: Van Tuyl—Business Arithmetic.

Math. 10. Business Mathematics.

Mr. Holler.

Prerequisite: Math. 9.
Second term Freshman Commerce, three hours per week.
A continuation of Math. 9 and including the development and use of Tables and Formulas which are used in accounting problems with the use of logarithms and the slide rule in computation.
Text: Vinal's Mathematics for Accountants.

Math. 11 and 11a. Freshman Algebra.

Mrssrs. White, Wilson, Boerckel, Armstrong, Elliott, Driscoll, and Holler.

Prerequisite, Entrance Mathematics for Freshman.
Math. 11. Freshman, first term, three hours.
Math. 11a. Freshman, second term, three hours, following Math 3.
A review of the important topics in the Algebra for entrance to the Freshman Class and advanced work in Theory of Equations.
Text: Ashton and Marsh.

Math. 15 and 15a. Trigonometry.

Messrs. White, Wilson, Boerkel, Armstrong, Elliott, Driscoll, and Holler.

Prerequisite, Entrance Mathematics. of Freshman.
Math. 15.. Freshman, first term, three hours.
Math. 15a. Freshman, second term, three hours, following Math. 3.
The derivation of all formulas of Plane Trigonometry, transformations, solution of trigonometric equations, right and oblique triangles. All exercises worked.
Text: Crockett's "Plane Trigonometry"; Wentworth's 5 place tables

Math. 18. Analytic Geometry.

Messrs. White, Wilson, Boerckel, Armstrong, Elliott, and Driscoll.

Prerequisite, Math. 3, 7, 11 and 15.
Freshman, second term, five hours.
Includes points, lines, circles, plots both rectangular and polar, transformation of co-ordinates from rectangular to polar and polar to rectangular, the ellipse, parabola, hyperbola, and loci of second order.
Text: Smith and Gale, "Analytic Geometry."

Math. 16. Slide Rule.

Professor Smith, Messrs. White, Boerkel, Armstrong, and Driscoll.

Freshman, except Commerce, second term, one hour.
The slide rule is explained and used in the solution of many problems of calculation.
Slide Rule required: Keuffel & Esser, Polyphase Slide Rule, 10 inch, No. 4053-3. No other rule permitted in class work.

Math. 21. Analytic Geometry.

Professors Field, Skiles, Morton, Smith, and Stamy.

Prerequisite, Math. 11, 15 and 18.
Sophomore, first term, two hours.
Special work in curve tracing and analytic geometry of three dimensions.
Text: Smith and Gale, "Analytic Geometry."

Math. 25. Calculus.

Professor Field, Skiles, Morton, Smith, and Stamy; Messrs. Elliott and Armstrong.

Prerequisite, Math. 11, 15 and 18.
Sophomore, first term, three hours.
Differential Calculus, including the derivatives of all algebraic and transcendental functions, maxima and minima, indeterminate forms, series, etc.
Text: Osborne's, "Calculus."

Math. 26. Calculus.

Professors Field, Skiles, Morton, Smith, and Stamp, and Mr. Elliott.

Prerequisite, Math. 11,15, 18, 21 and 25.
Sophomore, second term, five hours.
Complete Differential and Integral Calculus. Many problems of practical application from outside the text.
Text: Osborne's, "Calculus."

Math. 28. Calculus.

Professor Skiles.

Prerequisite, same as for Math. 26.
Sophomore, second term, five hours. Students in Arch., and E. C.
Integral Calculus and a short course in Differential Equations. A great many applications from Geometry, Physics, Chemistry, and Mechanics are given.
Text: Osborne's, "Calculus."

Math. 35 and 36. Differential Equations.

Professors Skiles, Morton and Stamy.

Prerequisite, Math. 18, 21, 25, 26.

Math. 35. Junior, first term, two hours. Students in M. E. and C. E.

Math. 36. Junior, second term, three hours. Students in E. E.

Ordinary Differential Equation of first and second orders and special types of higher order. A great many applications from Physics and Mechanics are given.

Text:. Campbell's "Differential Equations."

DEPARTMENT OF MECHANICAL ENGINEERING

Professors Coon, and King; Messrs. Martindale, Henika, Thompson, Van Houten, Norman, Griffin, Camp, Topham, Taylor, and Browning

General Statement

A mechanical engineer should possess accomplishments in three general particulars: He should be able to grasp and solve mechanical problems; he should be an expert mechanical draftsman in order to be able to design; and he should be thoroughly familiar with shop processes, and shop limitations. The studies in the mechanical course are laid out with these ends in view.

As Mathematics is, to a large extent, the basis of Engineering, the student is given a thorough course in this subject as an important part of his foundation work. Of scarcely less importance is the study of Physics and Chemistry, the former giving the student a knowledge of the laws of Nature, and the latter enabling him to better understand the composition of matter. The course in English is not only general, but practical in its benefits, since an essential part of the equipment of every engineer is the ability to express his ideas clearly and concisely either orally or in writing.

With a careful preparation in the foregoing subjects as a groundwork the student is prepared to take up the subjects which are of a technical nature, and peculiar to the course in Mechanical Engineering. It will probably not be questioned that a good designer of machinery must primarily be a good draftsman, and to this end, the course in Mechanical Drawing extends throughout the four years, it being recognized that the "only way to learn how to draw is to draw." Supplementing the work in the drafting room, a course is given in Machine Design, both by text-books and lectures, and in his Senior year the student is thrown largely upon his own resources, with the knowledge that neither here nor elsewhere, is the undergraduate competent to turn out good mechanical designs without assistance from an experienced designer.

As many hours as the time permits are devoted to work in the various shops. The purpose of this practical work is not to teach the student a trade, although it can not be questioned that the more skill a man possesses with his hands, the better off he is, in every way. With the exception of one or two preliminary tasks, all the machine shop work is confined to parts of machines under construction, the student following working drawings prepared under the supervision of an experienced designer. In the limited time he is enabled to devote to this class of work, the student does not ordinarily acquire sufficient skill to readily make the accurate fits required in first class construction, but he unconsciously acquires a knowledge of the manner in which the several members of a machine have to be fabricated, and this knowledge is of inestimable value to him as a designer of machinery. Of a like value is the knowledge gained by his work in the foundry and smith shop. Experience in pattern making and in the foundry enables the student to instinctively avoid designing needlessly difficult or absurd castings.

Studies of a strictly technical character pertaining to this course necessarily are deferred to the later years, as a thorough knowledge of the subject already briefly touched upon is essential to a comprehensive grasp on the student's part, of the basic principles of Mechanical Engineering. Many men have become eminent as engineers who had no training in a technical school. It is no doubt equally true that many men have become of great service in the engineering profession who owe their inspiration, their initial start to the training and the mental discipline, they received in some technical school. The purpose of a course in engineering is not so much in the line of imparting facts and information, as it is to enable the student to form the habit of logically reasoning, to depend upon his own resources, to draw correct conclusions from given premises,—in short to think.

Engineering courses do not pretend to cover the whole field of technical thought and achievement. At best they can impress upon the student only basic principles. Students who pursue successfully the course in Mechanical Engineering can not hope to be experts in all its varied and useful fields. On joining the great army of workers in the commercial world, they will inevitably drift into some particular line of work in which the productive period of their lives will be passed.

It will be conceded that it is not sufficient for a course in engineering to turn out technical experts, if it can hope to do even this. But it must do much more; it must turn out men. While the schedule of subjects in this course does not indicate it, it is the prime object to send out young men to engage in the commercial work of the world with high ideals and a keen sense of moral responsibility. Good character is of more importance to the young engineer than engineering ability. Much has been said about the "commercialism" of our time, but it is probable that no other one cause can have so profound and widespread influence for the uplift of all, as the right kind of manufacture, of trade, of commerce. There can not be too much commerce of the right sort. An earnest effort is made to fit our young men for the responsibilities of citizenship and to impress upon them the fact that the useful life, the life worth living, is a life of service.

Equipment

With the growth of the school, adequate as our shop equipment seemed to be, it has been outgrown, and the year 1912 saw a portion of the shops displaced by new ones of a decidedly better class. The new shops comprise a smith shop, containing space for forty forges, twice the former equipment,—and a foundry. Both of these shops are strictly up-to-date in plan, and among their most marked characteristics are the flood of light, and the splendid ventilating systems.

Forges of the down-draft system are installed in the smith shop, with also a score of vises for bench work. The foundry is equipped with core oven, brass foundry, overhead traveling crane, and an oil system for starting cupola fires. All roof trusses are of steel, in both shops, with a glass monitor roof. All blowers are electrically driven.

Adjoining the new shops is an administration building of strictly fire-proof construction, having brick walls, reinforced concrete floors and roof,—the latter covered with slate. This building is four stories high. On the basement floor are offices for the smith shop and foundry foremen, with complete lavatory and toilet facilities, and large storage bins for blacksmith's coal, and for other storage purposes. On the next, or ground floor, are a museum, a library, a large locker room with space for seven hundred lockers. Adjoining the latter are ample lavatory and toilet facilities for the students working in the shops. These rooms are fitted up in the style found in strictly first-class hotels, and from an object lesson to the students as to the provision which should be made for working men.

On the second floor of the administration building are the offices of the mechanical director, two large class rooms, and a drawing room, besides a janitor's room. On the top floor are two large drawing rooms, and a handsome studio and office, the entire floor being used by the Department of Architecture. The blackboards in the drawing rooms, and the class rooms below, are made of slate.

Later, new wood shops and machine shops will be added, each 40 ft. x 200 ft., with necessary offices, tool rooms, store rooms and lecture rooms.

The machine shop equipment comprises a large assortment of tools incident to the needs of the School. Several of these tools are much larger than are to be found at other technical shops. Among them are an iron planer 36 inch x 40 inch x 10 feet; two lathes having 25 ft. beds, the large, 36-inch swing; five 20 inch x 20 inch x 6 ft. iron planers all of our own design and manufacture complete; six emery wheel stands, and the steam engine which at present drives all the machinery in all the shops. Much of the machine shop equipment is new, including a universal milling machine, a universal grinding machine, shaping machine, horizontal boring machine and many lathes. There has been recently added to the present machine shop equipment one surface grinder, one shaper, one power hack saw, one drill press, one 20 inch x 6 ft. lathes, and three 22 inch x 6 foot lathes. The growth of the School will require additions to this equipment when we move into the new shops.

Besides the tools, etc., mentioned above as having been made in our shops, we have also made a 24-inch buzz planner for our own use which has given excellent satisfaction. The shops have also made nineteen high-speed wood lathes, all for our own use. We have also made a hot water boiler feed pump which has been a long time in successful service, scores of shaft hangers and bearings, many electrical machines, including a large rotary converter, many steam traps which work, steam and water pressure reducing valves, friction clutches, drawing stands, a great amount of cabinet work of various kinds and many other miscellaneous tools.

The shop management does not think it desirable, and thus far has not found it necessary to put students upon tasks to be cast into the scrap heap, though it would be much easier to run the shop on that plan. Neither does the shop purchase castings and drawings of machinery to be built. All work done in the shops is from our own design from beginning to end, and there has never been any indication that our plan is not successful.

For description of equipment used by student in mechanical engineering during the latter, or advanced part of the course, see Department of Experimental Engineering and also Electrical Engineering.

All students are given some practical work in concrete construction, which up to the present time has been in the form of outdoor walks, basement floors, flagging, or foundations.

Course in Mechanical Engineering

FRESHMAN YEAR

See page 54.

SOPHOMORE YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Dr.	27	Machine Drawing		3	3.
Eng.	21	American Literature	3		7.5
Math.	21	Analytic Geometry	2		5.
Math.	25	Calculus	3		7.5
M. E.	11	Mach. Shop		6	6.
Met.	21	Ferrous Metallurgy (or C. E. 1)	2		5.
Phys.	9	Physics	4		10.
Mil.	3	Military Instruction		5	5.
		Total..	14	14	49.

Second Term

C. E.	21	Plane Surveying (or Geol. 1a)	1	3	5.5
Dr.	28	Machine Drawing		3	3.
Eng.	24	Political Economy	3		7.5
Math.	26	Calculus	5		12.5
M. E.	12	Machine Shop		6	6.
Phys.	10	Physics	4		10.
Phys.	16	Physics Laboratory		3	4.
Mil.	4	Military Instruction		5	5.
		Total..	13	20	53.5

JUNIOR YEAR

First Term

Abbrev.		Subject	Hrs. Per W'k Class	Lab.	Equv.
Draw.	47	Kinematics of Mechanism	2	6	11.
Eng.	31	English Literature	3		7.5
Ex. E.	21	Calibration Laboratory		3	4.
Math.	35	Diff. Equations (Elec. for Mil. 5)	2		5.
Mech.	37	Applied Mechanics	3		7.5
M. L.	1	German } One required	3		7.5
M. L.	7	French }			
M. L.	13	Spanish			
Phys.	11	Physics	3		7.5
Phys.	17	Physics Laboratory		3	4.
		Total..	16	12	54.

Second Term

			Hrs. Per W'k Class	Lab.	Equv.
C. E.	33a	Hydraulics	3		7.5
Dr.	48	Kinematics of Mechanism	1	5	7.5
Eng.	32	English Literature (Elec. for Mil. 6)	3		7.5
Ex. E.	52	Hydraulic & Materials Lab.		3	4.
Ex. E.	76	Power Plants	2		5.
Mech.	38	Applied Mechanics	3		7.5
Mech.	48	Mechanics of Materials	3		7.5
M. L.	2	German } One required	3		7.5
M. L.	8	French			
M. L.	14	Spanish			
		Total..	18	8	54.

SENIOR YEAR

First Term

			Hrs. Per W'k Class	Lab.	Equv.
E. E.	3	Electrical Engineering Laboratory		3	4.
E. E.	5	Applied Electricity	3		7.5
Ex. E.	71	Fuels Laboratory		4	4.
M. E.	51	Shop Methods	2		5.
M. E.	61	Mechanics of Materials	2		5.
M. E.	63	Engineering Problems (Elec. for Mil. 7)	2		5.
M. E.	65	Steam Engine	4		10.
M. E.	69	Valve Gears	2		5.
M. E.	71	Designing (Drawing)		3	3.
M. L.	3	German } One required	3		7.5
M. L.	9	French			
M. L.	15	Spanish			
		Total..	18	10	54.5

Second Term

Ex. E.	72	Steam Engine Lab.		4	4.
Ex. E.	86	Gas Engine Lab.		4	4.
M. E.	66	Gas Engines	4		10.
M. E.	72	Machine Design (Drawing)		6	6.
M. E.	74	Machine Design	3		7.5
M. E.	76	Graphical Statics	2		5.
M. E.	78	Steam and Water Turbines	2		5.
M. L.	4	Thesis (Elec. for Mil. 8)			4.
M. L.	10	German } One required	3		7.5
M. L.	16	French			
		Spanish			
		Total..	14	14	51.5

Courses of Instruction

M. E. 3-4. Woodshop.

Prof. Coon, Mr. Henika, Mr. Norman, Mr. Browning.

M. E. 3. Freshman in Engineering and Commerce, first term, 45 hours.*

M. E. 4.. Freshmen in Engineering, second term, 45 hours.

M. E. 3a Sp. T. E., first term, 36 hours.

M. E. 3e, Sophomore Ind. Ed., first term, 45 hours.

An advanced course in Cabinet Making required of four-year students in Industrial Education. Not open to engineering students.

M. E. 4e, Sophomore, Ind. End., second term, 45 hours.

An advanced course in Pattern Making required of four-year students in Industrial Education. Not open to engineering students.

1st—To pass Woodshop, students must complete Bench and Lathe work, pass examination in Text Books, and put in 40 hours maximum or 20 minimum time, on Cabinet and Pattern Making; as soon as the maximum is completed, they are excused from Woodshop, and they cannot graduate until the minimum is completed.

2nd—Each unexcused absence shall take four points from grade; deficiencies caused by unexcused absences, at the end of the month, will necessitate repeating the subject.

3rd—No student will be allowed to do more than four hours work for himself until the maximum time has been completed.

As described above, the beginner completes satisfactorily about twelve tasks in joint making in wood. He then takes up wood turning and is kept on this, turning at first mere tasks, but later useful articles, such as file handles, etc., until he has acquired considerable skill at the lathe. After the lathe work the student is put upon cabinet work. It is always upon some useful thing, usually something ordered by some Department of the School. For instance, students have made hundreds of drawing boards, and scores of cabinets in pine, and in plain and quartered oak.

Students who have completed the maximum of 40 hours time are allowed to construct articles for themselves, being charged the bare cost of materials used. Very many of these articles have reflected the highest credit upon the student, and some astonishingly beautiful things have been constructed by boys who had had no prior experience whatever in the use of tools.

Students are required to keep their tools in good order, and only the very best of tools are supplied to them. The student pays for all damaged or missing tools.

All students are required to pass an examination in pattern-making, which is taught by lecture, text book and pattern construction.

Students from accredited schools where wood working is taught, are given credit for such work, but are required to pass an examination in pattern-making.

Students in Industrial Education are required to put in the full time scheduled in all courses, but after having completed the minimum of 20 hours, as outlined above, on Cabinet and Pattern Making, they are urged to use the balance of the time in making useful articles for themselves upon the same basis as recommended for engineers, viz., that they are required to pay only the bare cost of the materials used.

M. E. 5, 6 and 19. Smithshop.

Professor Coon and Mr. Thompson.

M. E. 5 or 5a, Freshman, first or second term, 45 hours.

M. E. 6, Freshman, Ind. Ed., second term, 445 hours.

A continuation of M. E. 5, required of four-year students in Industrial Education. Not open to engineering students.

M. E. 19, Junior Ind. Ed. first term, 45 hours.

*In the shop courses the total hours per term is given. In other courses, hours per week.

An advanced course in Blacksmithing, required of four-year students in Industrial Education. Not open to engineering students.

In the smithshop the student at first is given a set of tasks in forging, in order to acquire skill in the handling of a forge fire and in the heating of metals, as well as in the actual work of forging. He is taught the treatment required for different classes of steels. annealing and tempering, case hardening, brazing, tool dressing of lathe, tools, etc. Students in this shop make a very great number of useful articles, such as razors, carving sets, drawing knives, and irons, hammers, etc.

This subject is taught by text-book and lectures, as well as by practice, and students are required to pass an examination on these.

M. E. 7 and 8. Foundry.

Professor Coon and Mr. Van Houten.

M. E. 7 or 7a, Freshman, first or second term, 45 hours.

M. E. 8, Sophomore Ind. Ed., Second term, 45 hours.

A continuation of M. E. 7, required of four-year students in Industrial Education. Not open to engineering students.

Students in the foundry do the various work of the foundryman, making molds for patterns, running heats from the cupola, metal mixing, brass casting, alumimum and alloy making, core making, etc.

Students are required to pass an examination in this subject, which is taught, like the smith shop work, by text book and lectures ,as well as by practice.

M. E. 11 and 12. Machine Shop.

Professor Coon, Messrs. Martindale, Camp, Topham, and Griffin.

Prerequisite, M. E. 3, 4, 5, 7, and ability to read and understand simple machine drawings.

M. E. 11, Sophomore M. E., Junior Ind. Ed., First term, 90 hours.

M. E. 11b, Sophomore E. E., T. E., and Sp. T. E. II, first term, 45 hours.

M. E. 12, Sophomore M. E., and Junior Ind. Ed., second term, 90 hours.

M. E12b, Sophomore T. E. and Sp. T. E. II, second term, 45 hours.

The work in the machine shop is almost exclusively the construction of useful, workable machinery, as described in the opening announcement of the Department of M. E. All the varied processes carried on in a well-equipped machine shop of a manufacturing plant are at the disposal of the student. He is given work in gear cutting, turning, shaping, planing, drilling, grinding, babbiting journal boxes, chipping, filing, scraping not only flat surfaces, but scraping fits, laying out work, assembling, sketching, tool room keeping by check system, keeping machinery in order and making repairs of many kinds, valve fitting, cylinder boring, management of portable forge, keeping engines and dynamoes in order, firing and caring for steam boilers. At all times a varied class of work is in process of construction, such as lathes, planers, gas engines, steam traps, grinding machines, friction clutches, electric machines of different kinds, etc., and repairs for the various departments of the school.

Instruction and practical work are given in pipe fitting, both steam and water, plumbing in its various branches, electric wiring, etc.,

all under instruction of experienced men in the varied classes of work—men who have had large experiences in commercial work. Special emphasis is placed on this last statement. There is not an instructor in the shops anywhere who has not come up through the school of hard knocks, with years of experience in commercial shops.

M. E. 16. Plumbing and Pipe Fitting.

Professor Coon, McLaurin, Mr. Griffin, and Mr. Taylor.

Sophomores in Ind, Ed., second term, 60 hours.

This course is designed to introduce the student to the fundamentals of plumbers work, and will consist of the making of joints in wrought and cast iron pipe, lead pipe, and vitrified tile. All work will be executed to measure from working drawings. Students may elect additional work in plumbing during their Junior and Senior years. Not open to engineering students.

M. E. 17. Sheet Metal Work.

Professor Coon and Professor McLaurin.

Juniors in Ind. Ed., first term, 60 hours.

This course will include the development of patterns and the making of various commercial articles of sheet metal. Practice and facility in the use of fluxes and solder will be required. Students may elect additional Sheet Metal Work during their Junior and Senior years. Not open to engineering students.

M. E. 18. Wood Finishing.

Professor Coon, Professor McLaurin and Mr. Henika.

Juniors in Ind. Ed., second term, 45 hours.

This course will consist of practice in the preparation of wood surfaces for finishing, and study and practice in the use of shellac, paint, filler, stain, and varnish. Not open to engineering students.

M. E. 61. Mechanics of Materials.

Professor Coon.

Prerequisites, Math. 25 and 26. Mech. 48 and all Physics.

M. E. 31, Senior, first term, two hours.

Analysis of stresses in beams and girders. Analytical determination of formulas, of use of practical constants determined in testing machines. Columns, long and short, of wood, steel, concrete and reinforced concrete. Stresses in thick cylinders and boiler shells, pipe, etc. Girders, floors, roofs, etc., of reinforced concrete. Various stresses in shafting, transmission of power, etc. Centrifugal forces and other forces of acceleration in circular saws, fly wheels, connecting rods, etc. Stresses in tanks, grain bins, crane hooks, stand pipes, smokestacks, etc.

Text: Merriman, Mechanics of Materials.

M. E. 63. Engineering Problems.

Professor Coon.

Prerequisites, All Math., Phys., and Drawing.

Senior, first term, two hours.

Special problems in Analytical Mechanics, given to M. E. Seniors who have completed Mech. 38. Exclusively lectures and problems in

accelerated motion, such as centrifugal force, axis of spontaneous rotation, centre of percussion, point of application of resultant force, and its direction. Graphic analysis applicable. Forces applied to bodies free to move, with resultant motion.

M .E. 65. Steam Engine.

Professor Coon.

Prerequisite, All Math., Physics, Analytic Mechanics, and Drawing.

Senior, first term, four hours.

Thermodynamics of steam. Action of the steam engine as a heat engine. Indicator card. Temperature-entrophy chart. Analysis of compound and triple expansion engines, complete. Calorimetry, Condensers, Feed water heaters, Jacketing, Superheating, Injectors, and other boiler feeders. Lubricators, Governors, complete analysis by instant centre method (principle of virtual velocities.) Kinematics of the steam engine, rotative effort. Acceleration of piston and forces set up. Graphic analysis wherever applicable. Stresses due to various accelerations in connecting rod. Steam engine details, types of steam engines. Complete analysis of drop cut-off engines, such as Corliss, etc. Locomotive and marine engines.

Steam engine design, Steam turbine.

Text: Ripper.

M. E. 66. Gas Engine.

Professor Coon.

Prerequisites, All Math., Physics and Drawing.

Senior, second term, four hours.

Thermodynamics of gas engines, types of gas engines,—explosive engines, combustion engines, gas engine details, marine engines, stationary engines, gas engine fuels, combustion, carburetors, gas production, such as suction producers with "soft" coal, lignite, etc. Analysis of gas engine tests, heat balances, gas turbines.

Text: Carpenter and Diederichs.

M. E. 69. Valve Gears.

Professor Coon.

Prerequisites, All Math., Physics and Drawing.

Senior, first term, two hours.

Complete analysis of plain slide valve gears, fixed and shifting eccentrics, by Bilgram Zeuner and McCord diagrams. Exclusive graphics. Ryder (Meyer), and Gonzenbach gears. Complete blackboard analysis of link motions. Shifting (Howe-Stephenson) link; stationary (Danl. Gooch) link; straight link (Allan); Egide Walschaerts link; Pilliod link; all both for stationary and locomotive purposes. Buckeye valve gears. Joy, Marshall and Hackworth gears. Cam gears.

Text: Halsey and lectures.

M. E. 71. Drawing.

Professor Coon.

Prerequisites, All Math., Physics and Drawing.

Senior, first term, three hours per week.

The student is given the elements of a machine to design, as nearly as possible as would be done in a commercial drawing office. He is thrown upon his own resources, having access to other machines to aid him in deciding upon size, thickness, etc., with expert advice to prevent his drawing absurdities. The designing covers a wide range of subjects, its principal value being to impress upon the student the conventional shop practice, and the proper method of producing working drawings of machinery. All the various machines, etc., manufactured in the shops are from working drawings made by students.

M. E. 72. Machine Design Drawing.

Professor Coon.

Prerequisites, All Math., Physics and Drawing.

Senior, second term, six hours per week.

As far as possible the drawing of this term is in connection with the M. E. 74. It is also largely the solution of problems involving force, by use of graphical statics. Problems connected with governor design, as shaft governors, inertia governors, spring loaded governors, stresses in framed structures, etc. Laying out of power plants and works. Also, there are frequently machines to be designed and drawn for our use in the shops.

M. E. 74. Machine Design.

Professor Coon.

Prerequisite, All Math., Physics, Analytic Mchanics, Drawing, and M. E. 28 and 61.

Senior, second term, three hours. Text and lectures.

Wrought and cast iron pipe and fittings. Cylinders and joints. Boiler, horizontal, tubular, and vertical. Heating surface and grate area. Boiler and other riveted joints, analysis for maximum efficiency. Stacks and foundations. Clutches and brakes, disc, ring, strap and hydraulic. Belt and rope transmission. Locomotive and engine designs. Shafting hangers and lubrications. Gears, toothed and friction. Aeroplane construction.

Text: Spooner.

M. E. 76. Graphical Statics.

Professor Coon.

Prerequisites, All Math., Physics and Drawing.

Senior, second term, two hours.

Lectures and problems. Warren, Pratt, Bollman trusses, Fink, "A" roof trusses, etc. Analysis by tabulation and moments, supplemented by graphics in the drawing room. Graphical solution of governor problems.

The construction of mills and factories is not given a separate heading. Modern mill construction, including foundations, is given during the Senior year.

M. E. 78. Steam and Water Turbines.

Professor Coon.

Prerequisites, All Math., Physics and Drawing.
Senior, second term, two hours.
Construction and operation of the various steam turbines so far introduced. Superheated steam, Condensers, Forms of buckets and systems of expansion. Use in connection with compound reciprocating engines.
Water turbines, Pelton Wheels and others. Design, form of guides and buckets, Laws of Velocity, Efficiencies, Distribution of power from water-power sites. Construction of masonry and concrete dams, solid and cellular slip joints (expansion). Proper foundations for dams to secure permanency.

M. E. 51. Shop Methods.

Professor King.

Senior in M. E., first term, two hours.
The object of this course is to familiarize the student with shop processes in such problems as are common in daily practice; to further the knowledge he has gained in the more elementary shop courses; to give him a clear idea of the kind of problems one meets in a modern shop; and to instruct him in the methods of attacking and solving such problems.

DEPARTMENT OF MECHANICS

Professors Coolidge, Billmyer, Genz, and Sellman.

General Statement

The Department of Mechanics has its present quarters in the new wing added to the Mechanical Engineering building.
Instruction in this department is given to students who have elected courses in Mechanical, Electrical, Civil, Textile, and Experimental Engineering; also Chemistry, Architecture, Co-operative, and Industrial Education.
Particular emphasis is laid on the essentials in those divisions of Mechanics which the student will need in his particular branch of engineering. To that end a selective course is arranged suitable for students in the separate branches of engineering.
The fundamental principles of Mechanics are the foundations on which all sound engineering must rest. Sir Isaac Newton in the seventeenth century uncovered and heralded to the world in a concise statement the three simple "Newtonian Laws" which most of us know, few of us appreciate, and which the untutored engineer does not know how to intelligently apply. Mechanics, as such, is the elaboration of these laws in their useful application to engineering problems. An engineer without a working knowledge of these, either

inborn or acquired, will sooner or later contribute his quota to the usual junk heaps which should be sufficient object lessons to inventive minds who endeavor to produce without sufficient schooling in the unchangeable laws of Mechanics. It is the supreme purpose of the Department of Mechanics to teach these fundamental laws so that they may be correctly applied in engineering practice.

Tabulation of Subjects Taught in the Mechanics Department.

SOPHOMORE YEAR

Second Term

Symbol	Subject	Hrs. Per W'k Class	Lab.	Equv.
Mech. 26	Elementary Applied Mechanics (T. E.)	3		7.5

JUNIOR YEAR

First Term

Symbol	Subject	Hrs. Per W'k Class	Lab.	Equv.
Mech. 23	Elementary Applied Mechanics (I. E.)	3		7.5
Mech. 31	Appl. Mechanics (E.E., Sr. E. Ch.)	3		7.5
Mech. 33	Applied Mechanics (C. E.)	3		7.5
Mech. 37	Applied Mechanics (M.E., Co-ops)	3		7.5
Mech. 41	Mechanics of Materials (E.E.)	2		5.0

Second Term

Mech. 33	Applied Mechanics (M.E., Co-ops)	3		7.5
Mech. 44a	Mechanics of Materials (Arch., E. Ch.)	2		5.
Mech. 44	Mechanics of Materials (C. E.)	3		7.5
Mech. 48	Mechanics of Materials (M.E., Co-ops)	3		7.5

Courses of Instruction

Mech. 23. Elementary Applied Mechanics.

Professor Genz.

Prerequisite Math. 15.
Juniors in Industrial Education, first term, three hours.
An exposition of the simple laws of Mechanics applied to the solution of a considerable variety of practical problems is attempted in this course including analyses of external forces and the internal stresses induced by them.

Mech. 26. Elementary Applied Mechanics.

Professor Genz.
Prerequisite Math. 15.
Sophomores in T. E., second term, three hours.
Similar to Mechanics 23 as described.

Mech. 31. Applied Mechanics.

Professor Coolidge.

Prerequisite, Math. 26 or Math 28.
Juniors in E. E., and Seniors in E. Ch., first term, three hours.
Instruction is given in the application of the fundamental principles of Mechanics together with their application to problems oc-

curring in engineering practice which would interest the student in Electrical Engineering. Both graphical and mathematical methods are used in the analyses of a variety of problems.

Mech. 33. Applied Mechanics.

Professors Coolidge and Billmyer.

Prerequisite, Math. 26 or Math 28.
Juniors in C. E., first term, three hours.
Instruction is given in the application of the laws of Mechanics with special emphasis on the essentials which would be useful to the civil engineer in his practice. Both graphical and mathematical methods are used in the analyses of the various problems.

Mech. 37-38. Applied Mechanics.

Professors Coolidge and Billmyer.

Prerequisite, Math. 26 or Math. 28.
Juniors in M. E. and Co-op., first and second terms, three hours.
A very thorough and extended course in the elaboration of the laws embodied in the Statics and Kinetics of Mechanics with selected problems drawn from engineering practice to illustrate their application. Analyses of the problems by graphical methods are liberally employed together with a mathematical treatment of them.

Mech. 41. Mechanics of Materials.

Professor Genz.

Prerequisite Mechanics 31.
Juniors in E. E., first term, two hours.
An investigation is made of the simple stresses induced in various materials by various types of loads applied to simple beams, columns, and shafts, and the component parts of built up members found in the general design of structure and machines for the production of power.

Mech. 41a. Mechanics of Materials.

Professor Genz.

Prerequisite Math. 26 and Math 28.
Juniors in Arch. and E. Ch., second term, two hours.
Similar to course taken by civil engineers in Mechanics 44, but abbreviated on account of less time assigned for the work.

Mech. 44. Mechanics of Materials.

Professor Coolidge and Sellman.

Prerequisite Mech. 33.
Juniors in C. E., second term, three hours.
An analysis is made of the simple and compound stresses induced by various loads in simple beams, girders, columns, and struts, and the component parts when integrally built up. Standard stock, rolled

shapes and materials purchasable on the market are selected in the illustrative problems used in the investigation of stresses induced.

Mech. 48. Mechanics of Materials.

Professors Coolidge and Billmyer.

Prerequisite Mech. 38.
Juniors in M. E. and Co-op, second term, three hours.
A very thorough and extended investigation is made of the stresses induced in the various common materials used in the design of a large variety of structures and machines when subjected to loads incurred under working conditions. Attention is also given primarily to crystallinic changes in the material explained by a brief discussion of the more modern view point of magnetic affinity of particles in ferrous materials and their alloys, together with changes resulting from heat and mechanical working of materials. To illustrate fundamental formulas derived, current problems are selected with which the mechanical engineer has to deal in solving stresses in the members of a large variety of commercial machines.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

Reserve Officers Training Corps.

For list of instructors and staff see page 10.

Among many things the World War taught us that, as a nation, the battles of peace and war must be fought both by the citizen and the soldier, that our future safety lies in the development of a great and powerful citizen-soldiery. Altho the richest of nations we cannot attempt to maintain a paid force sufficient to meet the demands of any future national emergency. It is a mistaken idea that the professional soldier owes any greater allegiance to his country than does the citizen.

If we are reasonable, we must admit that every citizen must from now on be a soldier. This is more imperative and of greater concern now that Congress has seen fit to reduce the Regular Army from 300,000 to 150,000. But with the Act which accomplishes this, Congress has made liberal provisions for the development of the National Guard and the the Officers' and Enlisted Reserve Corps.

In the World War there was a job for every physically fit man and every job was important, one as much so as the other whether it was making hand-grenades in the United States or throwing them in France. The citizen-soldier fought and won the war "Over Here" and "Over There." And this is but another lesson of the great war. There was urgent need of the Chemical Engineer to find us a deadlier gas than our enemies used and to give us more powerful explosives. The Automotive Engineer found millions of trucks and tractors ready for him. There was a desperate call from the Signal Corps for every Electrical Engineer. There were camp sites to lay out, cantonments to construct, roads and bridges to build and repair, trenches and dugouts to build, and what-not for the Civil Engineer. There was need

for the lawyer, the physician, the surgeon, the minister, the educator, the actor, the actress, the cook, the manufacturer, the accountant, the undertaker and every other man, woman and child in every other walk of life. They composed the Army of the United States; they as citizen-soldiers fought and won the World War.

As it was in 1917 and 1918 it shall be again. History repeats itself over and over again.

In peace and in war the college graduate and under-graduate are the nations' greatest assets. Peace and war have proven this proposition. They seek the true education which blesses the nation with progress and prosperity along every line of endeavor, but unfortunately in the past as statistics compiled during the war show, educators overlooked two most important things concerned with education. First the American student was not adequately trained to a sincere and full appreciation of American citizenship, and second his physical development was neglected. Twenty-eight per cent of the young men of this country were found physically unfit for Class A service.

That the country must depend in the future upon its citizen-soldiers is a proposition which has prompted Congress to make most liberal provision for the support, maintenance and conduct of the Reserve Officers' Training Corps in our educational institution. The same proposition so vitally concerned with our national defense has caused the War Department to exploit the Reserve Officers' training Corps to the fullest extent possible under the Acts of Congress. The same proposition together with additional propositions that the youth of the country must be developed physically and trained in the duties of citizenship has made the Reserve Officers' Training Corps most acceptable to the educators of this country. The greatest institutions of the country, Yale, Harvard, Cornell, Pennsylvania, Princeton, Columbia, Massachusetts Institute of Technology and the others all maintain one or more units of the R. O. T. C. Most of them have three and four representing as many branches of the military establishment. The R. O. T. C. has the support of Congress and the support of the educators of the country. Were it devoid of merit or value it would be denied support from both.

The primary and ultimate purpose of the R. O. T. C. is to provide for undergraduates that degree of military training which together with their college education will fit them for commissions in the Officers' Reserve Corps. The R. O. T. C. courses are fitted into the curriculum of an institution where it is established. Its schedules are arranged according to several assumptions established as lessons of the World War.

1st. That there is a place in the military establishment for every college bred man.

2nd. That every subject taught in any collegiate department possesses some military value.

3rd. That military courses can be so arranged as to supplement and enrich the academic courses materially.

4th. That academic courses can be enriched and made more interesting by the introduction of certain pertinent features of especial military importance.

5th. That every student should be brought into intimate touch with the national government and be schooled in a clear understanding of his rights, privileges and obligations as a citizen.

6th. That every member of a military establishment must be physically as well as mentally fit to perform his every duty.

7th. That every youth should be taught the meaning of discipline, the power of confidence, the value of self-control, the requisites of leadership, respect for authority, the force of morale, the care of mind and body and the rewards of promptness and obedience.

That the R. O. T. C. has a broad and worthy mission cannot be doubted. The means and methods employed by the R. O. T. C. to accomplish its mission commend themselves to every considerate parent.

One of the most attractive features of the R. O. T. C. training is its liberal provision for field work, out-door drills and exercises and its compulsory physical training. The student, especially the Freshman or Sophomore, leaves the chalk and dust of a class-room daily to spend a healthful hour out in the open air. Depending upon the unit he is in he may get drill as an Infantryman, drill at the big guns, instruction in the care and operation of motor vehicles, field instruction with telephone and radio telegraph and telephone sets, scouting and patrolling, instruction in First Aid and Personal Hygiene, lectures in Military Law and History, lectures on the obligations of citizenship and the like. In addition to the prescribed physical training each one of the twelve companies comprising the "Tech" regiment has its foot-ball, basket-ball, base-ball, track and rifle teams. In the proper season each company enters its team to contest for regimental championship, and the members of each winning company team are awarded heavy jerseys with company letters.

In addition to the jerseys awarded winning teams there are various other medals and prizes given for excellence in regimental military and athletic activities.

There are five units of the R. O. T. C. in operation here. They are as follows:

INFANTRY, COAST ARTILLERY, SIGNAL CORPS, AIR SERVICE, MOTOR TRANSPORT.

The military instruction in each of these units parallels as far as possible the work of certain departments. For example, only stuednts of the Electrical Engineering Department are permittd to enroll in the Signal Corps unit. Enrollment in the Coast Artillery unit is restricted to Civil, Mechanical and Electrical Engineers. For the Motor Transport unit only Mechanical Engineers, especially those studying Automotive Engineering, are accepted.

COURSES

INFANTRY: Infantry Drill, Manual of Arms, First Aid, Personal Hygiene, Military History and Law, Topography, Minor Tactics, War Games, Machine Guns, Automatic Rifles, Trench Mortars, 37 m/m Gun, Camp Sanitation, Ceremonies, Interior Guard, Patrolling, Scouting. Lectures on citizenship and morale.

COAST ARTILLERY: Basic Infanty Drill, First Aid, Camp Sanitoiatn, Personal Hygiene, Military History and Law, Topography, Ballistics, Gunnery, Artillery Material, Motor Transportation, Powders and Projectiles, Fire Control, Orientation, Field Engineering, Minor Tactics, Employment and Emplacement of Heavy Artillery, Lectures.

SIGNAL CORPS: Basic Infantry Drill, First Aid, Personal Hygiene, Military Law and History, Topography, Minor Tactics, Staff Organization, Telephone Engineering, Telegraph Engineering, Radio Engineering, Automatic Telephony, Signalling, Communication Engineering and other subjects pertaining to Electrical Engineering.

MOTOR TRANSPORT: Basic Infantry Drill, First Aid, Personal Hygiene, Camp Sanitation, Care, operation and repair of Motor Vehicles, Engine Design and Construction, Cooling Systems, Lighting Systems, Ignition Systems, Transmission Systems, Strength of Materials, Engine Efficiency Tests, Oil Tests, Body Construction, Welding, Vulcanizing, Operation of nine trucks in convoys, Routing of Convoys, Studies in Motor Transportation, Studies of different types of motor cars, trucks and tractors and other subjects pertaining to Automotive Engineering.

AIR SERVICE: Basic Infantry Drill, First Aid, Personal Hygiene, Topography, Aerial Photography, Telegraph, Telephone and Radio Engineering, Minor Tactics, Machine Guns, Air-Craft Guns, Aeroplane Engines, Air-Plane Controls, Air-Plane Construction, Meteorology, Aero-Dynamics, Aviation History, etc.

EQUIPMENT

The United States has placed equipment valued at four hundred and fifty thousand dollars at "Tech" for the use of the R. O. T. C. This equipment comprises 1000 rifles, belts and bayonets and complete sets of Infantry pack equipment, machine guns automatic rifles of all types, trench mortars, 37 m/m guns, hand and rifle grenades, sixty complete sketching cases, relief maps, rifles and ammunition for target practice, one 8 inch howitzer, one 6 inch rifle, three 3-inch rifles, nine large and small trucks, one ten ton tractor, one complete machine shop truck, one motor car, four motor-cycles, complete fire control and range finding equipment, range finders, transits, telescopes, motor-generators, gas engine sets, various types of radio telegraph and telephone sets, buzzers, complete automatic telephone installation, heliographs, projectors, switchboards, telephones, etc. The following equipment will be furnished for the Air Service Unit: one captive balloon, one small Dirigible, several types of aero planes, aeroplane engines, and other accessories required in aviation instruction.

BENEFITS

Each member of the R. O. T. C. is allowed $36.00 a year for the purchase of prescribed articles of uniform. This is adequate to provide each student with 1 cap, 2 wool shirts, 1 blouse, 2 pairs of trousers, 1 pair of leggins and insignia.

In addition each member of the Advanced Course (Juniors and Seniors) receive pay at the rate of $16.00 (sixteen dollars) a month which is paid at the end of each quarter.

SUMMER CAMP

Soon after the close of school each summer the War Department conducts R. O. T. C. camps. The camps run for six weeks, and there is a different camp for each different unit. This summer students will go to the following camps:

Infantry	Camp Knox, Ky.
Coast Artillery	Fort Monroe, Va.
Signal Corps	Camp Vail, New Jersey.
Motor Transport	Camp Holabird, Md.
Air Service	Fort Sill, Oklahoma.

Camp attendance is elective for Freshmen and Sophomores. Members of the Advanced Course are required to attend camp one summer. The latter receive pay at the rate of $33.00 a month while in camp. All students going to camp receive mileage for the round trip at the rate of 5 cents a mile and are messed, housed, uniformed and given medical attention at government expense while in camp. From the time the student leaves school for camp until the time that he returns to his home he has no expenses.

DEPARTMENT OF MODERN LANGUAGES

Professors Crenshaw and McKee, and Mr. Campoamor.

General Statement.

The study of modern languages at the School of Technology has a two-fold aim. Primarily, its purpose is to enable students to translate into their own tongue with ease and precision the literature which is constantly appearing in these languages on their professional subjects. Secondarily, its aim is to create in the student a living interest in the literature of these languages—an interest so strong that he will continue to read the great literary masterpieces found in them.

The courses in French, German, and Spanish extend through two years, and candidates for all degrees, except that of Bachelor of Science in Textile Engineering, are required to take a two-year course in one of these languages.

The fall term of the first year is devoted to a thorough grounding in the inflections of the languages. In the spring term, the forms already learned are fixed by translating and parsing easy prose selections. Correct pronunciation is aimed at from the beginning, not by rules, but from the teacher. The ear is trained by dictation, and, as far as time will permit, by conversational exercises.

During the second year, works of greater difficulty are translated, the syntax of the language is studied more thoroughly, and the sentence structure is taught by practical work, both in written and oral exercises. In both years a wider field is covered by reading one part of the work assigned, carefully and slowly, another part rapidly. Greater facility in handling the languages is also gained by frequent sight translations.

In order that the students may learn to handle the topics discussed in the current technical magazines, articles from these are assigned to members of the Senior class, and written translations are required to be made in good English, at the same time faithfully reproducing the originals.

To facilitate this work, the Modern Language Department has at its disposal a reading room where magazines and newspapers published abroad and in the United States can be freely used by students.

DEPARTMENT OF MODERN LANGUAGES

Courses of Instruction

M. L. 1. Elementary German.

Professor Crenshaw.

Junior, first term, three hours.

German Grammar, including the declension of nouns, adjectives, the conjugation of strong and weak verbs, the use of prepositions, the word order in the independent sentence.

Texts: Vos, "Essentials of German"; Carruth, German Reader.

M. L. 2. Elementary German.

Professor Crenshaw.

Junior, second term, three hours.

German grammar, including the use of modal auxiliaries, passive voice, separably and inseparably compounded verbs, word-order in the dependent sentence.

Texts: Vos, Essentials of German; Storm, Immensee; Gore, German Science Reader; Truscott & Smith, German Composition; Wilhelmi, Einer musz heiraten; Benedix, Eigensinn.

M. L. 3. Advanced German.

Professor Crenshaw.

Senior, first term, three hours.

Grammar reviewed in connection with translations. Stress laid on the acquisition of a vocabulary for speaking and writing German and for translating German into English. Daily practice in German composition and German conversation.

Texts: Trescott & Smith, German Composition; Kutner, Commercial German; Wright, Scientific German; Lessing, Minna von Barnhelm; German Comedies.

M. L. 4. Advanced German.

Professor Crenshaw.

Senior, second term, three hours.

German syntax with special reference to the sentence-structure in connected prose. Translation of scientific German works on heat, light, steam, electricity, magnetism, electric motors and the steam engine.

Texts: Wright, Scientific German; Bacon, German Composition; Muller, Die Elextrischen Maschinen, Newspaper German; Schiller, Lied von der Glocke; Freytag, Die Journalisten.

M. L. 7. Elementary French.

Professors Crenshaw and McKee.

Junior, first term, three hours.

Elements of French grammar, including: forms of nouns and adjectives, regular conjugations, use of auxiliaries avoir and etre, position of personal pronoun objects, the use of cardinals and ordinals, the partitive noun and partitive genitive.

Texts: Fraser & Squair, French Grammar; Talbot—Le Franscais et sa Patrie; Halevy, L'Abbe Constantin.

M. L. 8. Elementary French.

Professors Crenshaw and McKee.

Junior, second term, three hours.

Grammar reviewed in connection with reading; drill on the forms of irregular verbs, use of tenses, relative and interrogative pronouns, passive voice, infinitive and subjunctive moods. Daily practice in French composition, dictation and conversation.

Texts: Fraser & Squair, French Grammar; Davies, Scientific French; Dumas, Excursions sur les Bords du Rhin.

M. L. 9. Advanced French.

Professors Crenshaw and McKee.

Senior, first term, three hours.

This course includes the translation of advanced literary and scientific French texts; exercises in connected French prose with special reference to French syntax; daily sight translation; French dictation; French conversation.

Texts: Talbot, French Composition; Hugo, La Chute; Courrier des Etats Unis ;Scientific French; Dumas, Vingt Ans Apres; Notre Dame.

M. L. 10. Advanced French.

Professors Crenshaw and McKee.

Senior, second term, three hours.

This course is a continuation of M. L. 9. in which the aim is to secure a broader knowledge of French literature, and a more accurate knowledge of French composition and French conversation.

Texts: Moliere, Le Bourgeois Gentilhomme; Le Mois; La Revue des Deux Mondes; Talbot, French Composition; Lectures on French Literature; Feuillet, Le Roman d'un Jeune Homme Pauvre.

Spanish

The courses in Spanish are intended to equip the student with a speaking knowledge of the language. Conversation begins practically with the first lesson and extends throughout the course. The daily language of the home, street, newspaper, business and commerce is

taught by the use of commercial readers, Spanish newspapers, Spanish magazines, Spanish conversation and Spanish composition. The fundamental differences between Castillian and American Spanish are pointed out and practice is given in the American Spanish. The whole trend of the instruction is practical.

M. L. 13. Elementary Spanish.

Professors Crenshaw and McKee and Mr. Campoamor.

Junior, first term, three hours.

Spanish Grammar, including the forms of nouns, adjectives and pronouns; the regular conjugations; the idiomatic use of estar, ser, hacer, tener.

Text: Hills First Spanish Course; Pittaro, Spanish Reader.

M. L. 14. Elementary Spanish.

Professors Crenshaw and McKee and Mr. Campoamor.

Junior, second term, three hours.

Spanish Grammar including position of personal pronoun objects, verbs with radical change, use of subjunctive mood, passive voice, irregular verbs.

Text: Hills and Ford, First Spanish Course; Sparkman, Industrial Spanish; Escrich, Fortuna.

M. L. 15. Advanced Spanish.

Professors Crenshaw and McKee and Mr. Campoamor.

Senior, first term, three hours.

This course is devoted to Spanish composition, Spanish conversation and to the translation of works of greater difficulty in literary and scientific Spanish. Use is made of current Spanish magazines and newspapers.

Texts: Alarcon, Novelas Cortas; Kuhl, Spanish Composition; La Revista del Mundo, (The World's Work in Spanish); El Comercio.

M. L. 16. Advanced Spanish.

Professors Crenshaw and McKee and Mr. Campoamor.

Senior, second term, three hours.

This course is a continuation of M. L. 15 in which the points stressed are; first, the acquisition of the vocabulary of daily life; second, Spanish conversation; third, the ability to write business letters in Spanish; fourth, fluency in translating technical commercial and neswpaper Spanish into good English.

Texts: Waxman, A Trip to South America; Echegary, Locura O Sanidad; Cuentos Modesnos; El Comercio; Blanco y Negro; Moratin, El Si de las Ninas; Quintana, Vasco Nunez de Balboa.

MOTOR TRANSPORT TRAINING SCHOOL

Profs. King, Dunn, Kapp, Dr. Shaw, McEver, Roblee, Lt. Shriver, Mr. Preston and Mr. Saywell.

This school was established at the Georgia School of Technology in the fall of 1919, by the Motor Transport Corps of the United States

Army and is open only to officers and men in the regular army. These officers and men are detailed by the Corps for work at the Georgia School of Technology.

The equipment especially provided consists of an Engineering testing laboratory containing facilities for testing of automobile motors, chassis and all auxiliary equipment connected with motor transportation and a machine shop fully equipped with individually motor driven machines.

The following courses are provided for these men:

First Term

Math. 1. Mathematical Review and Application.

This course consists of a short review of elementary algebra, plane geometry and trigonometry, with special reference to the solution of shop problems. Two recitations per week.

Text books used 1920-1921. Shop Problems in Mathematics by Breckenridge-Mersereau-Moore.

Chem. 3. Chemical Principles.

An intensive review of the fundamental principles and conceptions of inorganic chemistry, confining the illustrative matter to a very few of the chemical elements, chiefly those met on hydro-carbon fuels. Three lectures per week and one laboratory period per week.

Text book used 1920-1921—Principles of Chemistry by Hildebrand.

M. T. C. 5. Machine Shop Practice.

An analytic study of the different machine tools and their application to modern machine shop practice. Two recitations and one laboratory period per week.

Text book used 1920-1921. Modern Machine Shop Tools by VanDerVoort.

M. T .C. 7. Gas Engines.

This course involves a very thorough study of all parts of the automobile. Two lectures and one laboratory period per week.

Text book used 1920-1921. Gas, Gasoline and Oil Engines by Hiscox-Page.

Co-op. 40. Production Methods.

A study of the human element in manufacture with reference to industrial efficiency. One recitation-lecture period per week.

E. E. 41. Electrical Engineering.

An elementary course in Electricity and Magnetism leading up to and including Direct Current Machinery. Two recitations and one 3 hour laboratory period per week.

Text book used 1920-1921. Essentials of Direct Currents by Timbee-Higbie.

M. T. C. 17. Ignition, Lighting and Starting Systems.

A course dealing with the construction and operation of ignition systems, lighting and starting systems, and storage batteries. A thor-

ough course is given in the testing of the above equipment. One lecture and one laboratory period.

M. T. C. 19. Mechanical Drawing and Machine Sketching.

A study in making mechanical drawings by freehand methods for rapid use in conveying ideas in the shop. One laboratory period per week.

Second Term

M. T. C. 6. Machine Shop Practice.

A continuation of Course No. 5. One Laboratory period per week.

Met. 56-58. Alloys and Metallography.

This course covers a survey of the different iron alloys, their heat treatments and microscopic structure. The laboratory consists of practical tests of the iron alloys in the materials laboratory after heat treatment and the making of microsopic specimens of the material tested. Two lectures and one laboratory period per week.

Text book used in 1920-1921. The Metallurgy of Iron and Steel, by Bradley-Stoughton.

M. T. C. 12. Machine Shop Management.

This course deals with the design of machine shops and different methods of getting high shop efficiency. Two lectures per week.

E. E. 42. Electrical Engineering.

A continuation of Course 41. Two Recitations and one laboratory period per week.

Text book used 1920-1921. Essentials of Alternating Currents, by Timbie-Higbie.

M. T. C. 16. Automobile Design.

A course covering the design of automobile engines and the chassis as far as time will permit. Individual problems in design are assigned. Two laboratory periods per week.

Text book used 1920-1921. Motor Vehcle Engineering by Favary.

M. T. C. 18. Ignition, Lighting and Starting Systems and Carburetion.

A continuation of Course No. 17. One lecture and one laboratory period per week.

M. T. C. 20. Shop Costs and Stock Records.

A thorough study of shop cost keeping systems and stock records so as to get the maximum efficiency from the shop. Two recitations per week.

Co-op. 41. Production Methods.

A continuation of Course No. 40. One recitation per week.

M. T. C. 24. Fuels and Materials laboratory.

A study of hydrocarbon fuels, lubricating oils, and materials are made in the Experimental Engineering Laboratory. One laboratory period per week.

Mech. 26. Elementary Applied Mechanics.

A study of simple structures used around the shops and the application of the laws of mechanics to their proper design. Three recitations per week.

Text book used 1920-1921. Elementary Applied Mechanics by Inchley and Morley.

DEPARTMENT OF PHYSICS

Proessors Edwards, Thompson, Hunter, Samuels, Jenness, and Beardsley.

General Statement

The aim of this department is to present the fundamental principles of Physics, the experimental basis upon which they rest, and, as far as possible, the mathematical reasoning employed in the deduction of various physical formulas. The student is not only made acquainted with certain physical laws in accordance with which physical events occur, but is taught that all physical quantities can be represented by symbols, and that certain mathematical relations exist between them, in consequence of which logical deductions can be made.

The study of Physics is taken up in a thorough and systematic way. Numerous problems are assigned in recitations, in order to familiarize the student thoroughly with the significance and practical use of the principles which he learns and the physical formulas which he sees deduced.

Equipment

The lecture room is provided with various facilities for experimental demonstration; running water, gas, and electricity from dynamo and storage-battery are available. There is a good stereopticon with arc-lamps and mechanical dissolver; also a projecting lantern with automatic feed arc-lamp, supplied with vertical attachment—an acces sory to a lecture room which is indispensable for the presentation. to a large class, of a great variety of physical phenomena. The apparatus available for lecture experiments is large, and additions of modern equipment are constantly being made.

The laboratories of the department occupy three rooms in the basement of the Academic building and a newly fitted room in the north end of Knowles Dormitory. The total floor space available for this work is about 5,500 square feet. The equipment of the laboratories is very complete, large additions having been made during this term by purchase and by construction in the school shops. In the subject of mechanics and heat several units of each piece of apparatus are available thus allowing students to work in groups on the same experiment. Large additions have also been made in the equipment of the laboratories fo rexperiments in light, sound, electricity, and magnetism. The equipment in electricity is especially good, all new galvanometers, bridges, and resistances being of high grade.

The course in laboratory includes the experimental verification of physical formulas and the determination of various physical constants, and is designed to give the student practice in the use of instruments of precision and proficiency in the manipulation of physical apparatus. Carefully written reports are required on all experiments performed. These reports include the proof of all formulas used in calculations. The application of the principles of analytical geometry to the solution of practical problems is emphasized in this course.

Course of Instruction

Phys. 5. Elementary Mechanics and Sound.

Professor Samuels.

Prerequisite, Math. 15.
Sophomore, T. E., Arch., and Ind. Ed., first term, three hours.
This course consists of recitations, problems and lectures. The physical properties of matter, Mechanics of Solids, Mechanics of Fluids, and Sound are included in this course. A large number of numerical problems are solved.
Text: Gage's "Principles of Physics."

Phys. 6. Elementary Light, Heat, and Electricity.

Professor Samuels.

Prerequisite, Phys. 5.
Sophomore, T. E., Arch., and Ind. Ed., second term, three hours.
A continuation of Phys. 5, Light, Heat, Electricity, and Magnetism being treated in an elementary way.
Text: Gage's "Principles of Physics."

Phys. 7. Laboratory.

Professors Edwards and Samuels.

Parallel course, Phys. 5.
Sophomore, Ind. Ed., first term, three hours.
Supplementary to Phys. 5 for students in the course in Industrial Education.

Phys. 8. Laboratory.

Professors Edwards and Samuels.

Prerequisite, Phys. 5.
Sophomore, T. E., and Ind. Ed., second term, three hours.
Supplementary to Phys. 5 and 6 for students in Textile Engineering and Industrial Education.

Phys. 9. Mechanics, and Heat.

Professors Edwards, Thompson, Hunter, Samuels, and Beardsley.

Prerequisite, Math. 18.
Sophomore, M. E., E. E., C. E., and E. Chem., first term, four hours.
A course in Kinetics, Elasticity, Mechanics of Fluids, and Heat.

Most of the time is devoted to Kinematics and Kinetics. The solution of a large number of numerical problems is required, involving the use of the English Engineers' and Metric systems of units.
Text: Reed aond Guthe's "College Physics."

Phys. 10. Heat, Sound, Magnetism, and Electricity.

Professors Edwards, Thompson, Hunter, Samuels, and Beardsley.

Prerequisite, Phys. 9.
Sophomore, M. E., C. E., and E. Chem., second term, four hours.
A continuation of Phys. 9. Heat, Sound, Magnetism, and Electricity are included in this course.
Text: Reed and Guthe's "College Physics."

Phys. 11. Electricity and Light.

Professors Edwards, Thompson, Hunter, Samuels and Beardsley.

Prerequisite, Phys. 9 and 10, Math. 25 and 26.
Junior, M. E., E. E., and E. Chem., first term, three hours.
This course includes lectures and recitations. The principles of Electromagnetic induction and Electromagnetism are taken up in a systematic way. The application of these principles to the dynamo and motor are explained by lectures and demonstrations.
The subject of discharge of electricity through gases is given by lectures and a large number of demonstrations.
In the subject of light, special attention is given to optical instruments.
Text: Reed and Guthe's "College Physics."

Phys. C 11a.

Professor Jenness.

A continuation of Phys. 11, for Co-op students.

Phys. 13. Laboratory.

Professors Edwards, Thompson, Hunter, Beardsley, and Jenness.

Prerequisite, parallel course in Phys. 9.
Sophomore, E. E., first term, three consecutive hours of alternate weeks.
This course consists of experiments, reports, and instruction in the laboratory. The experiments are on Mechanics and Heat.
Reference: Nichols' "Laboratory Manual."

Phys. 14. Laboratory.

Professors Edwards, Thompson, Hunter, Samuels, and Jenness.

Prerequisite, Phys. 9 and 13.
Sophomore, E. E., second term, three consecutive hours.
A continuation of Phys. 13. The course is designed for students of Electrical Engineering. The experiments are on Mechanics, Heat, and Electricity.
Reference: Nichols' "Laboratory Manual."

Phys. 15. Laboratory.

Professors Edwards, Thompson, Hunter, Samuels, and Jenness.

Prerequisite, Phys. 10 and 14.
Junior, E. E., first term, three consecutive hours.
The experiments in this course are on Electricity, Magnetism, and Light.
Reference: Nichols' "Laboratory Manual."

Phys. 16. Laboratory.

Professors Edwards, Thompson, Hunter, Samuels, and Jenness.

Prerequisite, Phys. 9.
Sophomore, M. E., C. E., E. Chem., second term, three consecutive hours.
This course is similar to Phys 13. The experiments are on Mechanics and Heat.
Reference: Miller's "Laboratory Manual," and Nichols' "Laboratory Manual."

Phys. 17. Laboratory.

Professors Edwards, Thompson, Hunter, and Jenness.

Prerequisite, Phys. 16.
Junior, M. E., C. E., E. Chem., first term, three consecutive hours.
A continuation of Phys. 16. The experiments are on Sound, Light, Electricity, and Magnetism.
References: Miller's and Nichols' "Laboratory Manuals."

Phys. 30. Laboratory.

Professor Jenness.

Prerequisite, Phys. 9, and parallel course Phys 10.
Sophomore Co-op., second term, three consecutive hours.
This course consists of experiments, reports, and laboratory instruction in Mechanics.

Phys. 31. Laboratory.

Professor Jenness.

Prerequisite, Phys. 10, and 30, parallel course Phys. 11.
Pre-Junior Co-op., first term, three consecutive hours.
A continuation of course 30. The experiments are on Heat, Magnetism, and Electricity.

Phys. 32. Laboratory.

Professor Jenness.
Prerequisite, Phys. 11 and 31, parallel course Phys. C 11a.
Pre-Junior Co-op., second term ,three consecutive hours.
A continuation of course 31. The experiments are on Electricity, and Light.

TEXTILE DEPARTMENT

The A. French Textile School

Professors Seal, Camp, and Jones; Messrs Philpot, Brandon, Martin and Wood.

General Statement.

The Textile Department gave the first instruction in textile education in the South in February, 1899. The end of the first decade found the department well past the experimental stage, proceeding along well tried lines with the various phases of its curricula, appreciated and fully recognized by cotton manufactures and the public in general.

The scope of instruction has been broadened to include the very highest grades of yarns and fabrics in order to exhibit the possibilities of native resources, as well as to give technical training along textile lines.

This department now offers excellent advantages to young men who intend entering the textile industry. The department is equipped for performing practically every process of cotton manipulation from cotton field to finished fabric, and has admirably arranged class rooms, laboratories, etc., for giving practical instruction in the sciences and the application of this knowledge along industrial lines.

A large amount of practical work is given, enabling the student to familiarize himself with all details in the design, construction and operation of the various types of the several machines and processes. The yarns required in the weaving rooms are manufactured in the carding and spinning department, thus affording opportunity for performing the whole of every process and operation on yarn and fabric.

Products are manufactured by the students, under the direction of skilled instructors, in as nearly mill-like manner and quantity as is consistent with best results. These products are not merely experimental samples, but are made in quantity with the quantity fully up to mill standards.

Textile Building

The Textile Building is a splendid example of architectural skill in modern mill construction. Its three floors, 150 x 70 feet, contain class rooms, laboratories and halls for textile equipment.

Textile Equipment

Great care was exercised in selecting the textile equipment, for the different branches of cotton manufacture. It will be noticed, in almost every process, that different forms of machines, as built by the different makers, have been installed, thus enabling the student to become familiar with the various types, as well as affording a most unusual opportunity for direct comparison.

The power for driving the machines is derived from electric motors and is transmitted by Jones and Laughlins equipment. The Sturtevant system is used for heating and ventilating. The entire building is provided with Grinnell automatic sprinklers for fire protection and is lighted by electricity.

Carding Department

Ginning.—One Winship Cotton Gin with Feeder and Condenser.

Pickers.—One Saco-Lowell Breaker with Automatic Feeder; one Finisher with Perhams and Davis Sectional Plate Evener, and Kirschner Carding Beater.

Cards.—One Saco-Lowell 40-inch Revolving Flat Card; one Whitin 40-inch Revolving Flat Card; one Howard & Bullough 40-inch Revolving Flat Card.

Combing.—One Dobson & Barlow Sliver Lap Machine; one Whitin Sliver Lap Machine; one Whitin Ribbon Lap Machine; one Dobson & Barlow Comber, 8 heads; one Whitin Comber, 6 heads.

Drawing.—One Saco-Lowell Drawing Frame, 4 deliveries, metallic rolls; one Whitin Drawing Frame, 4 deliveries, metallic rolls.

Fly-Frames.—One Woonsocket Slubber; 32 spindles; one Woonsocket Intermediate, 42 spindles; one Woonsocket Fine-frame, 64 spindles; one Providence Fine-frame, 64 spindles; one Saco-Pettee Jack-frame, 96 spindles.

Miscellaneous.—Grinding, stripping and burnishing rolls; percentage, roving and yarn scales; complete set carder's tools, sliver balance, change gears, etc.

Spinning Department

Ring Spinning.—One Fales & Jenks Combination Warp and Filling Frame, 80 spindles; one Fales & Jenks Filling Frame, 80 spindles; one Saco-Lowell Combination Warp and Filling Frame, 132 spindles; one Howard & Bullough Combination Warp and Filling Frame, 160 spindles; one Whitin Warp Frame, 64 spindles.

Mule Spinning.—One Mason Spinning Mule, 360 spindles.

Twisting.—One Draper Twister, 128 spindles; one Draper Twister, 32 spindles; one Fales & Jenks Twister, 80 spindles.

Spooling.—One Easton & Burnham Spooler, 24 spindles; one Draper Spooler, 40 spindles; one Fairmont Presser Spooler, 12 drums.

Winding and Reeling.—One single spindle Universal Winding Machine; one Universal Winding Gang, 6 spindles; one Tompkins Reel, 50 spindles.

Miscellaneous.—One Week's Banding Machine; one power yarn testing machine, two Barber knotters; one twist counter; spindle sets change gears, etc.

Warping.—One Entwistle Beam Warper; One Draper Beam Warper; One Draper Ball Warper.

Weaving Department

Warping and Winding.—One Entwistle Beamer; one Cole Beaming Machine; one Fairmount Bobbin Winder; one Universal Winder ..o. 90.

Slashing.—One Lowell Single Cylinder Slasher; one Lowell Size Kettle; one Lowell Size Pump.

Hand Looms.—Hand-weaving room, with thorough equipment of hand bobbin winders, warping pins, hecks, drawing-in frames, and 24 hand looms with 30 harness dobbies, 4 shuttles, 4 beams complete and 200 Halton Jacquard.

Power-Looms.—One C. & K. medium Duck Loom, shuttle changing; one Stafford Duck Loom, shuttle changing; one C. & K. 2 x 1 Box Gingham Loom with magazine; one C. & K. 4 x 1 Box Jacquard Loom; one Draper Loom, 5 harness work; one Draper Loom, 2 harness work; all motor driven; one Colvin Plain Loom; six Draper Northrop Looms; one Lewiston Pillow Case Loom; one Whitin Plain Loom; one Nor-Dray Loom, 3 harness work; one Nor-Dray Loom, 2 harness work; one Mason Plain Loom; two Kilburn-Lincoln Looms; one Mason Gingham Loom; one Northrop Loom, 3 harness work; one Northrop Loom, 2 harness work; one Crompton Gingham Loom; one Mason Dobby Loom; three Crompton Dobby Looms; two Knowles "Gem" Looms; Crompton-Thayer Dobby Loom; one Fairmount Dobby Loom; one Fairmount Loom, 600 Jacquard; one Crompton Knowles Upholstery Loom, 400 Jacquard: C. & K. 4 x 1 Box Gingham Loom, 400 Schaum & Uhlinger Jacquard; one Stafford Plain Loom; one Lewiston Wide Loom, 1,200 Halton Jacquard; one Crompton Damask Loom, 600 Jacquard.

Finishing.—One Curtis & Marble Railway Sewing Machine; one Curtis & Marble Brushing and Calendering Machine; one Elliott & Hall Cloth Folder; one Windle Doubling and Winding Machine; one Parks & Woolson French Napper; one American Napping Machine Co.'s French Naper.

Dyeing Department

One Klauder Weldon Raw Stock Dyeing Machine; one Klauder-Weldon Skein Dyeing Machine; one Hussong Skein Dyeing Machine; one Textile Finishing Co.'s Chain Warp Dyeing Machine; one Franklin Yarn Dyeing Machine; one National, Electrolytic Bleach Machine; one Draper Winding-on Machine; one Draper Winding-off Machine; one Textile Finishing Machinery Co.'s Can Chain Warp Drying Machine; one Schaum & Uhlinger Engine-driven Hydro-Extractor; one Berry Ventilating Wheel; one Granger Jigg Dyer; one Phillips Steam Chest; one Butterworth Steam Cylinder; one dry room; four cypress dye vats, regulation depth; one set Phillips' Copper Measures; twelve small cypress dye vats, fitted with steam and water for experimental dyeing.

The dyeing laboratory is fitted up complete for experimental dyeing, color matching, testing, and analysis. Students have access to our splendid collection of dyestuffs and dyed specimens.

Course Leading to the Degree of B. S. in Textile Engineering.

The four-year course in Textile Engineering was established in response to the demand for instruction in the arts and sciences directly applicable to the cotton manufacturing industry.

The course includes a sound foundation in engineering subjects, in addition to the purely textile branches, lecture room theory being combined throughout with laboratory practice.

The practical results of this well rounded course are well illustrated in the positions of trust and responsibility occupied by the alumni, by the numerous requests for their services and in the increasing number of matriculates attracted by the successful careers of former students.

It will be noticed that the course includes Mathematics, English, Chemistry, Physics, Mechanism, Mechanics, Steam Engines and Boilers, Power Transmission, Lubricants, Strength of Materials, and Shop Work, Drawing, Machine Design, Corporations and Finance, in addition to Carding, Spinning, Weaving, Bleaching, Dyeing, Finishing, Mill Construction and Equipment, Mill Economy and Practice.

Department of Textiles.

FRESHMAN YEAR

See page 54.

SOPHOMORE YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem. 9	Qualitative Analysis	1	3	4.5
Dr. 27	Machine Drawing		3	3.
Eng. 21	American Literature	3		7.5
Math. 21	Analytic Geometry	2		5.
Math. 25	Calculus	3		7.5
M. E. 11	Machine Shop		3	3.
Phys. 5	Physics	3		7.5
T. E. 9	Yarn Manufacture, Practice		3	3.
T. E. 31	Fabric Design		3	3.
T. E. 49	Weaving, Practice		3	3.
Mil. 3	Military Instruction		5	5.
	Total..	12	23	52.

Second Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem. 10	Qualitative Analysis	1	3	4.5
Dr. 28	Machine Drawing		3	3.
Eng. 24	Political Economy	3		7.5
Mech. 26	Elem. Applied Mechanics	3		7.5
M. E. 12	Machine Shop		3	3.
Phys. 6	Physics	3		7.5
Phys. 8	Physics Laboratory		3	4.
T. E. 10	Yarn Manufacture, Practice		3	3.
T. E. 32	Fabric Design		3	3.
T. E. 50	Weaving, Practice		3	3.
Mil. 4	Military Instruction		5	5.
	Total..	10	23	51.

Military Instruction is optional for Juniors and Seniors as a substitute for an equivalent amount of the work tabulated below.

JUNIOR YEAR

First Term

Chem. 21	Organic Chemistry	3		7.5
Chem. 23	Organic Laboratory		3	3.
Dr. 41	Kinematics of Mechanism	3		7.5
Eng. 31	English Literature (Elec. for Mil. 5)	3		7.5
T. E. 1	Yarn Manufacture, Theory	3		7.5
T. E. 11	Yarn Manufacture, Practice		3	3.
T. E. 27	Fabric Analysis		3	3.
T. E. 33	Fabric Design		3	3.
T. E. 41-51	Weaving, Theory and Practice	2	3	8.
	Total..	14	15	50.

Second Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem. 22	Organic Chemistry	3		7.5
Chem. 24	Organic Laboratory		3	3.
Dr. 44	Kinematics of Mechanism		3	3.
Eng. 32	English Literature (Elec. for Mil. 6)	3		7.5
T. E. 3-12	Yarn Manufacture	3	3	10.5
T. E. 32	Dyeing, Laboratory		3	3.
T. E. 34	Fabric Design		3	3.
T. E. 28	Fabric Analysis		3	3.
T. E. 42-52	Weaving, Theory and Practice	2	3	8.
	Total..	11	21	48.5

SENIOR YEAR

First Term

Com. 47	Corp. Finance (Elec. for Mil. 7)	3		7.5
Ex. E. 73	Elem. Steam Engine Lab.		3	4.
Ex. E. 73	Heat Engines & Thermo Dyn.	3		7.5
T. E. 3-13	Yarn Manfacture	3	3	10.5
T. E. 17	Dyeing, Theory	2		5.
T. E. 23	Dyeing, Laboratory		3	3.
T. E. 43-53	Weaving, Theory and Practice	2	3	8.
T. E. 71-75	Mill Engineering	1	3	5.5
T. E. 81-85	Knitting	1	2	4.5
	Total..	15	17	55.5

Second Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Com. 48	Corp Finance (Elec. for Mil. 8)	3		7.5
E. E. 2	Applied Electricity	3		7.5
E. E. 3a	Applied Elec. Engineering Lab.		3	3.
Ex. E. 74	Fuels and Gas Engine Lab.		3	4.
Ex. E. 80	Hydro-Electric Power Plants	2		5.
T. E. 4-14	Yarn Man'f	3	3	10.5
T. E. 18	Dyeing, Theory	2		5.
T. E. 24	Dyeing Laboratory		3	3.
T. E. 37	Jacquard Design		3	3.
T. E. 54	Weaving Practice		3	3.
T. E. 72-76	Mill Engineering	1	3	5.5
	Total..	14	20	55.

SPECIAL TEXTILE COURSE

General Statement.

This course is offered to students not having the necessary time to pursue the four-year course.

The entrance requirements are the same as for the four-year course, except in cases where the applicant has had one or more years of practical mill experience.

The course includes instruction in carding, spinning, weaving, dyeing, fabric structure, fabric analysis, Jacquard design, wood shop, smithy, foundry, machine shop, Chemistry, English, Mathematics, and Machine Drawing.

This course is not recommended to any student who can possibly arrange to pursue the regular course, but it is meeting the demand for a brief course, and many former students of this course are now holding remunerative and responsible positions in textile mills.

Special Textile Course.

FIRST YEAR

First Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
Chem. 1	Inorganic Chemistry	3		7.5
Chem. 5	Chemical Laboratory		2	2.
Eng. 11	Rhetoric	3		7.5
Eng. 15	Theme Writing and Speaking		1	1.
Dr. 27	Machine Drawing		3	3.
Math. 9	Business Arithmetic	3		10.5
T. E. 1, 9,	Yarn Manufacture	3	3	10.5
T. E. 31	Fabric Design		3	3.
T E. 41, 49	Weaving, Theory and Practice	2	3	3.
Mil. 1	Military Instruction		5	5.
	Total..	14	20	55.

Second Term

Chem. 2	Inorganic Chemistry	3		7.5
Chem. 6	Chemical Laboratory		2	2.
Eng. 12	Rhetoric	3		7.5
Eng. 16	Theme Writing and Speaking		1	1.
Dr. 28	Machine Drawing		3	3.
Math. 10	Business Arithmetic	3		7.5
T. E. 2, 10	Yarn Manufacture	3	3	10.5
T. E. 22	Dyeing Laboratory		3	3.
T. E. 32	Fabric Design		3	3.
T E. 50	Weaving, Practice		3	3.
Mil 2	Military Instruction		5	5.
	Total..	12	23	53.

SECOND YEAR

First Term

M. E. 3-5-7	Wood Shop, Smithy or Foundry		6	6.
T. E. 3-11	Yarn Manufacture	3	3	10.5
T. E. 17-23	Dyeing, Theory and Practice	2	3	8.
T E. 33	Fabric Design		3	3.
T. E. 37	Jacquard Design		3	3.
T. E. 27	Fabric Analysis		3	3.
T. E. 42-51	Weaving, Theory and Practice	2	3	8.
T. E. 71-75	Mill Engineering	1	3	5.5
Mil. 3	Military Instruction		5	5.
	Total..	8	32	52.

Second Term

Abbrev.	Subject	Hrs. Per W'k Class	Lab.	Equv.
M. E. 11-12	Machine Shop		6	6.
T. E. 4-12	Yarn Manufacture	3	3	10.5
T. E. 18-24	Dyeing, Theory and Practice	2	3	8.
T. E. 43-52	Weaving, Practice and Theory	2	3	8.
T. E. 34	Fabric Design		3	3.
T. E. 28	Fabric Analysis		3	3.
T. E. 72-76	Mill Engineering	1	3	5.5
T. E. 81-85	Military Instruction		5	5.
Mil. 4	Knitting	1	2	4.5
	Total..	9	31	53.5

T. E. 1, 2, 3, 4. Yarn Manufacture, Theoretical.

Professor Camp and Mr. Philpot.

T. E. 1, Junior and Sp. 1, first term, three hours.

T. E. 2, Junior and Sp. 1, second term, three hours.
Prerequisite, T. E. 1.

T. E. 3, Senior and Sp. II, first term, three hours.
Prerequisite, T. E. 1 and 2.

T. E. 4, Senior and Sp. II, second term, three hours.
Prerequisite, T. E., 1, 2 and 3.

This course includes lectures, recitations from technical text books and notes upon the machines and processes. The work includes the study of cotton; its varieties, cultivation, ginning, grading, etc.; the special features of the various cottons; classes and numbers of yarn for which certain cottons are most suitable; and the methods used by mills in buying cotton. This is followed by a study of the principles, and, the details of construction and operation of the machines used in the department. The student is thoroughly drilled in all calculations pertaining to this machinery, including organizations for various numbers and classes of yarns.

T. E. 9, 10, 11, 12, 13, 14. Cotton Yarn Manufacture, Practical.

Professor Camp and Mr. Philpot.

T. E. 9 and 10, Sophomore, and Special I, first and second terms, 3 hours.

T. E. 11 and 12, Junior and Special II, first and second terms, 3 hours.

T.E. 13 and 14, Senior, first and second terms, 3 hours.

The practical work in yarn manufacture begins with the Sophomore year and extends throughout the course. The students are allowed every opportunity of acquiring a thorough knowledge of the construction and practical working of each machine. A moderate amount of time is devoted to the actual running of the different machines, so as to make them familiar with the use and operation of each machine and process. Each student is required to ascertain such particulars as, draft, twist, weight, hank or number, speed, production, etc., at each machine in this department. Some time is spent in testing laps, slivers, rovings and yarns, for comparing the actual with the theoretical results; indicating speeds, sizing rovings, yarns, etc., and getting up the necessary data for determining the efficiency of the machines; the effect of different twists, humidities, and temperatures on the appearance and the strength of yarns.

Practice is afforded in taking various parts of the machines down and replacing them; clothing, grinding and setting the revolving top flat card; setting rolls, spindles, builders, etc.; making the comber settings and timings, making changes in the numbers and varieties of yarns.

Cotton matching by the government standard is practiced sufficiently to enable the student to get some idea about classing cotton. The merit or spinnable value of cotton is also studied.

T. E. 81,85. Seamless Hosiery Knitting.

Mr. Philpot.

Prerequisite, T. E. 1, 2.

Senior first term, Sp. II, second term, one hour lecture, 2 hours practice.

The course is given in the form of notes and lectures, and practical work, covering the construction and operation of Circular Latch-needle Hosiery machines. Beginning with the simple hand machine, the work is gradually extended to include the present type of machine which is entirely automatic in its action. A close study is also made of the ribber, which represents a different system of knitting and is essential to the making of men's hose.

Considerable time is devoted to studying the methods pursued in finishing hosiery goods. This consists of a study of the equipment necessary for this work which includes looping, scouring and dyeing machines, and, also the forms used for drying and shaping the goods.

The student is also afforded considerable practice in operating the machines, making necessary adjustments of the various parts and, the arrangement of cams and pattern chains for producing the different style articles for which the machine is designed.

The equipment consists of late models from several makers of the various styles of machine used in this work, and, is sufficiently extensive to give the student a clear idea of the processes necessary for the production of this class of hosiery.

Prospects for additional equipment for this department in the near future are very good. This will enable us to extend the work to include other systems of knitting and will serve to broaden the course considerably.

T. E. 17, 18. Dyeing.

Mr. Jones.

Prerequisite, Chem. 1, 2, 5, 6, T. E. 22.

Parallel, T. E. 23, 24.

T. E. 17. Senior and Sp. II, first term, 2 hours.
T. E. 18.. Senior and Sp. II, second term, 2 hours.

The subject, which includes the theory of both bleaching and dyeing, is taught by means of recitations from text books and lectures, in conjunction with laboratory work and experiments, covering such details as the study of the physical and chemical properties of cotton, wool, silk, artificial silk and the minor fibres, chemical agents commonly made use of under above head and their application to above fibres, bleaching agents, cotton bleaching, mercerizing, water impurities and purifications, theories of dyeing, natural and artificial colors,

particular attention being paid those colors of value in cotton dyeing. The course in dyeing is arranged in conjunction with that in textile chemistry, required of all textile students, the object of which is to give the student a clear idea of the fundamental principles which underlie the arts of bleaching and dyeing.

T. E. 22, 23, 24. Dyeing Laboratory.

Mr. Jones and Mr. Wood.

Prerequisite, Chem, 1, 2, 5, 6.
Parallel, T. E. 17, 18.
T. E. 22, Junior and Sp. I, second term, 3 hours.
T. E. 23, Senior and Sp. II, first term, 3 hours.
T. E. 24, Senior and Sp. II, second term, 3 hours.

Experimental dyeing begins the second half of the Junior and extends through the Senior year. The Junior work (T. E. 22) is in preparation for T. E. 17, 18, 23, 24, and is intended to acquaint the student with the elementary principles of dyeing and bleaching before taking the work up in more advanced form. Dyeing laboratory, includes such work as tests and experiments in: preparation of materials for bleaching and dyeing, bleaching agents and methods of bleaching, mordants, fixing agents and assistants, the use and application of natural dyes and artificial coloring matters, the dye ing of single and compound shades, color mixing and shade matching, testing of dyes for fastness and value.

T. E. 27, 28. Fabric Analysis.

Mr. Brandon.

Prerequisite, T. E. 31, 32.
Junior and Sp. II, first and second terms, 3 hours.

Instruction is first given in the various yarn standards and calculations leading to analysis. The student is provided with specimens of yarns for determination of breaking strength, count, twist, material, and cost of spinning. Specimens of fabric are then dissected for determination of weave, color arrangement, texture, quality and percentage of materials, counts of warp and filling, analysis of finish, and other technical consideration. The more advanced work in the analysis of cloths of different character renders the student familar with modern systems of ascertaining the exact construction of existing fabrics and compiling the data in suitable form for guidance in the reproductions of the fabrics.

In the latter part of this year the study of fabric analysis is taken up, samples of all kinds being analyzed. In this work woolen, worsted and silk fibers are touched upon as well as cotton, this being necessary in order that the student may be able to make the tests necessary to distinguish between them. This work also covers sizes and other materials which are used for their weight giving properties.

T. E. 31, 32, 33, 34. Fabric Design.

Mr. Jones.

T. E. 31, 32, Sophomore and Sp. 1, first and second term, 3 hours.
T. E. 33, 34, Junior and Sp. II, first and second terms, 3 hours.

The study of design covers a period of three years and is a par-

allel course to dobby and jacquard weaving, by which means the practical application of the theoretical design to the cloth gives a more thorough insight into the acutual construction of the fabrics. During the first year fundamental weaves and their derivatives are constructed, special attention being given to their application to the various fabrics for which they are best suited. Following this work is the combining of these weaves into designs and their application to the cloth. Methods of reduction and drawing in are then taken up, one of the main objects at this time being to get a clear understanding of the relative value of the design to the actual fabric.

The course of study laid out for the second year consists of a continuation of the above, and includes also the design of the more complicated weaves such as piques, gauze and leno fabrics, ply fabrics and the actual laying out on paper of all data necessary to construct the various cloths.

T. E. 37. Jacquard Design.

Professor Seal.

Prerequisite or Parallel, T. E. 27, 28, 31, 32, 33, 34.

Sp. II, first term and Senior 2nd term, 3 hours.

In the third year the design of fabrics for jacquard weaving is taken up. The course covers the entire range of jacquard work and is made as practical as seems consistent with best results. The simplest type of jacquard machine is first studied. together with the various methods of tying in the harness. After this the more complicated and larger machines are taken up before the actual work of designing is begun. Understanding the principles and limitations of the several machines and forms of harness, the student is taught the selection of figures, the making of cloth sketches, and the symmetrical distribution after stripe, diagonal or motive arrangement. The course also covers such technicalities as the proper selection of design papers, the development of the ground and figure with the various weaves, figure shading, card stamping and lacing, casting-out etc. In connection with this work is the punching and lacing of the cards from pattern, after which a sample is woven to see the results obtained. Every design made by the student during this study of jacquard design is placed on a machine, either hand or power loom.

Course of Study

First Year—Fundamental Weaves, Derivatives, Reduction and Drawing In, Simple Fabric Layouts.

Second Year—Ply Fabric Design, Leno Design, Extra Warp Effects, Fabric Analysis.

Third Year—Study of Jacquard Machine, Jacquard Design, Card Cutting, Application of Design to Fabrics.

T. E. 41, 42, 43. Weaving, Theoretical.

Mr. Brandon.

T. E. 41, Junior and Sp. I, first term, 2 hours.

T. E. 42. Junior, second term and Sp. II, first term, 2 hours.

T. E. 43. Seniors, first term and Sp. II., second term, 2 hours.

The study of weaving beginning with the Junior year is conducted by means of lectures, and demonstrations on the equipment of power

looms in the weaving laboratory, the work starting with the simplest motion and loom then working gradually through the more advanced and complicated types until a good theoretical knowledge is obtained of the principal makes of machines in use in the southern mills. The student makes drawings of the principal parts, illustrates their use and prepares notes on the setting and timing of the same, giving causes and remedies for looms producing fabrics of faulty construction. Special attention is paid to the study of warping, slashing and the mixing of adhesives, softeners, antiseptics, and weight giving elements into sizes to yield certain characteristic results. During this term the study of calculations necessary in the size of yarns and construction of cloth is begun, this including the counts, weight, length and reed calculations. The construction and drawing of loom harness cams is given, first by theoretical data and later by actual measurements from looms in the laboratory, this work including all types and forms of cams necessary for producing fabrics within their scope and limit.

In the second term Junior the work is extended to automatic looms. Let-off and take-up motion, warp and filling stop motions, feeler motions, protector and shuttle changing mechanisms, thin place preventers, etc., are studied in detail. A comparison is made of the various types of automatic looms for both plain and colored work. Late method in yarn and fabric calculations, loom gear, belting calculations, loom speeds, the importance of cloth construction, and all calculations necessary for the same included in the work of this year.

In the Senior year dobbies, single and double index, head motion of various types, box motion and Jacquards are studied. Although this course is primarily a cotton one, at various times the subjects of silk, linen, jute, wool and worsted are touched upon as a machine adapted to that work is studied. Pattern weaving and arrangement of colors for advanced fabrics is given and all calculations pertaining to the same. Advanced loom fixing relative to machines above is given by means of lectures, this work being parallel to the course in the weaving laboratory.

T. E. 49, 50, 51, 52, 53, 54. Weaving, Practical.

Mr. Brandon, and Mr. Martin.

T. E. 49 and 50, Sophomore and Sp. I, first and second term, 3 hours.

T. E. 51, Junior Sp. II, first and second term, 3 hours.

T. E. 53 and 54, Senior first and second terms, 3 hours.

The instruction given in weaving is being placed more and more on an experimental basis so that the student may by actual manufacture become familiar with the different cotton fabrics. The equipment the facilities in the weaving department are such that we are able to give each student individual attention and correct mistakes in faulty construction before the fabric to be woven is placed on the loom. The scope of the work undertaken, the proficiency obtained and the high standard required of the finished fabrics are to the student completing this course a sound as well as a general knowledge of the application of design to fabric and fabric to loom.

Outline of Study in Weaving.

First Year, First Term—Hand Loom Weaving.
First Year—Second Term—Hand Loom Weaving of original Designs.
Second Year, First Term—Power Loom Weaving.
Second Year, Second Term—Power Weaving, Colored Work, Loom Fixing.
Third Year, First Term—Box Looms and Dobby Weaving.
Third Year, Second Term—Box Loom, Dobby and Jacquard Weaving.

T. E. 60, 61, 62, 63, 64, 66. Industrial Teacher Training.

T. E. 60, Juniors and Ind. Ed., second term, 2 hours.
T. E. 61, Seniors in Ind. Ed., first term, 3 hours.
T. E. 62, Juniors in Ind. Ed., second term, 3 hours.
T. E. 63, Seniors in Ind. Ed., first term, 6 hours.
T. E. 64, Seniors in Ind. Ed., second term, 3 hours.
T. E. 66, Seniors in Ind. Ed., second term, 6 hours.

The above courses are given only to students in Industrial Education and for the purpose of providing training in the actual operations of the textile industry. These courses differ from those of the regular courses given to engineering students in that the aim is to train men as textile operators and teachers. T. E. 60, 61, and 64 are given by lecture and recitation; T. E. 62, 63, and 66 are laboratory courses. Students may elect additional work in the Textile Mill during the Senior year.

T. E. 71, 72, 75, 76. Mill Engineering.

Professor Camp.

Prerequisite, T. E. 1, 2, 9, 10, Parallel T. E. 3, 4.
Seniors and Sp. II, first and second terms, one hour lecture and 3 hours practice.

T. E. 71, 72, 75, 76. Mill Engineering.

Professor Camp.

Prerequisites, T. E. 1, 2, 9, 10.
Parallel, T. E. 3, 4.

Seniors and Special No. 2, first and second terms, one hour lecture and three hours practice.

In this work a study is made of the machinery for coarse, medium and fine yarns; calculations are made for finding the number of the various machines needed in the equipment of a mill for making a certain kind and amount of product; specifications of the machines, and the laying out or arranging the machines for the best results, as regards economy in power and labor. The different methods of driving all the machines are studied. An estimate is made of, the cost of the machinery, horsepower required, labor cost, etc. The sale of the products, terms, etc., factory laws are also taken up.

A study is made of modern mill plans, followed by a study of mill heating, ventilating, humidifying and fire protection.

The student is required to work out many of the most important problems confronted with in the design of a complete textile mill.

NIGHT SCHOOL

Atlanta as a manufacturing center, has a large population of operatives, most of whom have been denied vocational training above the average standard imposed by faulty apprenticeship and financial necessity.

In addition, the expanding manufacturing interests of the city offer constantly increasing inducements to the young men who will prepare themselves for skilled labor. To meet both of above conditions, a Night School was inaugurated in the Institution March 2, 1908, and is now in successful operation.

The Night School is supported by appropriation from the City Council of Atlanta, supplemented by a small contingent fee charged each student.

The session for 1921-22 will begin Sept. 26, 1921, and continue in session until June 9, 1921, divided into two terms of eighteen weeks each. The period beginning Dec. 20, 1921, and ending Jan. 1, 1922, will be observed as a holiday. The contingent fee for each term will be $10.00. Courses leading to a certificate in Architecture, Chemistry, Electrical Engineering, and Automobile Engineering, offered for the first time in 1919-1920, will be offered again. These are three year courses. The following special courses will also be offered: Drawing, Mathematics Machine Shop, and Auto Mechanics, a course covering 36 weeks and devoted to a study of the automobile as it is. An auto shop is provided where the parts of the machine are taken down and put up again, each feature of the machine being carefully explained.

For full information concerning the Night School, address,

A. B. Morton, Dean, Ga. School of Technology.

THE SUMMER SCHOOL

The twenty-fifth annual session of the Summer School will begin July 25, 1921, and continue for eight weeks. As in former years the Faculty will be chosen from members of the faculty of the Georgia School of Technology.

The School is designed primarily to give a thorough training in some of the subjects required for examination by applicants for admission to the Freshman class of the Georgia School of Technology; and, secondly, to enable such students of the Georgia School of Technology as have incurred deficiencies in their work to remove these deficiencies and continue with their respective classes.

The instructors, by reason of their connection with the School of Technology, are particularly well fitted to know the needs of the student and to direct his work. Knowing, moreover, the demands which will be made upon him after he enters the School of Technology, they will advise him as to the class which he should prepare to enter.

Emphasis is laid on those studies which a student finds most difficult, the instructor pointing out and laying stress upon the impor-

tant principles which occur in each lesson. In this way a student's mind is filled with the principles he is to use and not crowded with useless materials. Success, being largely dependent upon the individual and his fitness for an application to his work, can not be guaranteed, but is expected in the case of those who will work earnestly for it.

It must be borne in mind, however, that the Summer School is essentially a school of review, and that, as the time spent here during the summer is short at most, it is essential to success that students enter at the opening of the session.

For the subjects upon which students who wish to enter the Freshman class must pass an examination the reader is referred to the subject entitled "Admission" in this catalogue. The curriculum of the Summer School includes Elementary Physics, Advanced Algebra, Plane and Solid Geometry, the class-room work in Freshman Chemistry, Sophomore and Junior Physics, and all the Mathematics offered in the Freshman, Sophomore and Junior classes, and the English in the Sophomore and Junior classes of the Georgia School of Technology.

Students who attend the Summer School will be given examinations immediately at its close, thus lifting anxiety from their minds and giving them an opportunity for rest before the regular session begins.

Students of the Georgia School of Technology who have deficiencies in their college work will find the Summer School an excellent place for review. The Board of Trustees, at a recent meeting, has granted the Summer School the right to give credit to students who satisfactorily review subjects in which they are deficient, or to students who wish to study with a view to advanced standing.

Such credit is given as follows: A student who is deficient shall be allowed to take in review the equivalent of three three-hour subjects for one-half year. Students taking such subjects will be regarded in exactly the same light as those who repeat a subject during the regular session.

A deficiency in five-hour subject can be removed by double assignment of duty each day the Summer School is in session. Students who wish to take advanced standing will be allowed credit in the equivalent of two three-hour half-year subjects or one five-hour half-year subject by double assignment.

All examinations for advanced standing, or for the removal of deficiencies will occur at the close of the Summer School. By a three-hour, half-year subject is meant a subject which has three recitations per week for one-half the school year.

The college subjects offered in the Summer School are identical in character and scope, and approximately the same in time with those offered during the regular session of the Georgia School of Technology.

The Dean of the Summer School will be glad to furnish a list of boarding places to prospective students, after June 1, 1921.

Further information regarding courses and entrance requirements will be found in this catalogue, or may be had by addressing the Registrar.

Information regarding rates of tuition, length of session, and benefits of the Summer School, will be furnished upon application to Prof. A. B. Morton, Georgia School of Technology, Atlanta, Ga.

Medical Attendance.

Dr. J. B. White and Miss Florida Newman.

The Joseph Brown Whitehead Memorial Hospital has been in operation six years; and the system instituted at its opening has been so successful in treating the sick and conserving the health of the student body, that the same system will be in force during the coming year.

The School Surgeon is in charge of the Hospital and a trained nurse is in residence, thus insuring the very best care of the student in case of sickness. A hospital term fee of $5.00 is charged to all students, who do not reside at home. Payment of the hospital fee entitles any student who is temporarily ill to all necessary medical treatment, without charge, by the School Surgeon, and to necessary medicine and skillful nursing by a trained nurse, in residence. This exemption from charges does not apply to chronic cases, to surgical operations, or to constitutional disorders, the cause of which existed prior to the student's enrollment.

A student becoming ill will be required to report to the hospital for treatment at the discretion of the School Surgeon, unless attended by his own physician.

A student sick with diphtheria, scarlet fever, or smallpox will be sent to the public hospital provided for those diseases, and will pay his own board while there, but will be entitled to free medical treatment by the school surgeon, and will be provided with the necessary medicine required for the treatment of his case, without charge.

A "Special Nurse" will be provided in those cases where the same is desired, at an additional fee covering the salary of the nurse and board, at the rate charged above. When consultation is required the student will pay the fee for consultation.

A student residing at home, who desires to avail himself of the hospital privileges will be allowed to do so by payment of the stated fee. But no student who has been in attendance the first term will be allowed this privilege the second term, except by paying the fee for both terms. A student matriculating for the second term will pay the hospital fee for that term only.

Students not residing in the domitories will be charged twenty five cents for each meal served in the hospital.

The Library

A $20,000 library building, gift of Mr. Andrew Carnegie, occupies a central location on the Campus. The building has been occupied twelve years, during which time the number of volumes has increased from about 3,000 to 15,000. It is now a well equipped Library in every way, being strongest in its scientific side, but also containing many other valuable books, especially in literature and art. Each

year valuable acquisitions are made, with a view to strengthening the work of the college in each department. The Library also contains many rare books, among them a number of early 16th and 17th century volumes, the gift of ex-Governor Joseph M. Brown.

A most important feature is its number of scientific periodicals. The Library is now supplied with over one hundred of the leading papers and periodicals of this country and Europe. Each year has shown a decided growth over the preceding year in every way, and the entire outlook promises well for future expansion.

The Library is in the charge of a competent and throughly trained Librarian and her assistants. All books and pamphlets, as soon as received, are classified and catalogued in accordance with the most approved library system.

Library hours are from 8 A. M. to 6 P. M. daily, and Friday and Saturday evenings from 7 to 10.

Atlanta Carnegie Library

In addition to the School library, students have free use of the Atlanta Carnegie Library, where they are always welcome. This library contains over 40,000 volumes. A great many books of reference have been added within the past year, among them a number of very valuable technical works which have been made available to students.

SOCIETIES AND STUDENT ORGANIZATIONS.

Young Men's Christian Association.

The Young Men's Christian Association is the largest student organization in school in that every student is a member, and that its purpose is to serve, without partiality, the moral, social and spiritual need of each individual in the community. There is scarcely a student organization that does not, in one or many ways, come to the Y. M. C. A. for assistance, and in this way it touches the entire life of the school.

It conducts weekly devotional and special Sunday evening meetings for the students, attempts to keep them in touch with the happenings of the missionary world, conducts studies and investigations on the social problems of the times, and attempts in an effective way to supplement training afforded by the class-room curriculum. It brings prominent religious, social, and lay workers to address the student body from time to time. It is in no sense a church, nor does it attempt in any way to take the place of the church, but it does aid the various churches of the city in their attempt to reach the students here and to supplement the work they do among the students.

An evangelistic campaign is conducted by the Association during the school year. The purpose of this campaign is to raise the moral tone of the school and to inspire each man to live a more useful Christian life.

One of the most important features of its work is the organization and conduct each year of groups for Bible study. The plan is to organize the students into congenial groups for daily and systematic study of the Bible. The leaders of these groups are students who have been coached each week before they meet their group, by member of the Faculty or one of the Secretaries. For the past year over five hundred students have thus been engaged in the study of the Bible, and the place of such work is recognized by them as necessary to their best development. An Employment Bureau has been organized this year which has aided a number of students in helping defray their college expenses.

The Association with its excellent equipment, constitutes the real center of the student life. Its splendid home offers a wholesome atmosphere and adequate amusement, making it unnecessary for a boy to go to the city to spend his idle hours.

Mr. E. L. Secrest who received his education at Trinity College and Yale University is now closing his third year as General Secretary of the Association.

Mr. Harry C. Underwood is Associate General Secretary. He was educated at Wesleyan University where he was prominent in a number of college activities. The cabinet and other voluntary workers have co-operated with the secretaries in serving practically every need of the student body.

THE HONOR SYSTEM.

The following declaration of principles has been adopted by the student body with regard to honesty in their work:

"We the students of the Georgia School of Technology, hold that the heart of education is morality, and the essence of achievement is character. We would place honor above credits and base attainment upon desert. We believe there is no enduring reputation which is not rooted in worth and no real success which has not its foundation in manhood; that every honorable man would rather suffer failure than stoop to fraud; and that trustworthinesss is the superlative asset of the engineer.

As a concrete expression of this belief we hereby pledge ourselves:

First, Neither to give nor to receive assistance during examinations, recitations or any work upon which we are graded.

Second. To report to the proper authorities anyone who we have good reason to believe is guilty of giving or receiving unauthorized assistance."

The Honor system has been in successful operation at the Georgia School of Technology for several years. An Honor Court is elected from the student-body to develop and foster the right spirit in regard to the Honor System, and to conduct the trial of persons accused of violating it. The following are the members of the Honor Court:

THE HONOR COURT

Seniors

F. L. Asbury, Jr., Pres.
H. W. Russel, Vice-Pres.
I. G. Nelms, Sec.
E. C. Settle
G. B. Turner

Juniors

D. D. Scarboro, S'g't at Arms
R. D. Cole
J. E. Conrad

Sophmore

L. A. Moore

Freshman

C. P. Rather

Alternates

C. S. Coleman
J. E. Getzen

COLLEGE ATHLETICS

THE GEORGIA TECH ATHLETIC ASSOCIATION

Dr. J. B. Crenshaw, Director

Mr. W. A. Alexander, Head Coach

Mr. R. A. Clay, Baseball Coach

Mr. J. W. Bean, Basketball Coach

Mr. F. F. Wood, Football Coach

College Athletics at the Georgia School of Technology is managed and controlled by a Board of Directors consisting of five members of the teaching force appointed by the President, who is ex-officio, chairman of the Board, three students, chosen by the student body, who are the president, vice-president, and secretary of the Georgia Tech. Athletic Association, and two alumni, elected by the Alumni Association. This Board aims to secure co-operation of the faculty and the students in athletic affairs, to maintain the highest standards of sportsmanship, to give every student an opportunity to take part in some athletic activity, and to arouse in each one the desire to improve his health and physique, so as to leave school a better man physically as well as mentally. Athletic activities are not allowed to interfere with the proper attention to, and progress in the courses of instruction, but every encouragement is given to participation in some form of exercise. The liberal policy adopted by the Faculty towards athletics has resulted in the greatest enthusiasm for college sports, so that the number engaged in some form of outdoor exercise is very large, over fifty per cent, and is increasing yearly. The interest shown is in the following order: football, baseball, track, basketball, tennis, swimming, golf.

Military and Class Athletics.

For the benefit of those students who are not members of varsity or scrub teams at Georgia Tech. games are played in all brances of sport between company teams and class teams. During the past year each of the twelve companies that compose the R. O. T. C. regiment at Tech put out teams in football, baseball, basketball, and track. A regular schedule was played in each of the above sports and the members of the winning team were awarded jerseys by the Athletic Association. The Greek Letter Fraternities also have a league in football, baseball, and basketball, the winning fraternity receiving a handsome silver loving cup, which is presented each year by the Pan-Hellenic Council.

A system has also been devised during the past year by which it is possible for any student in school to score points for any organization to which he belongs in the Winter Cross Country Run and in the regulation track events in the spring. In this way all organizations in the school from the waiters in the mess hall to the Senior Class are put in active athletic competition with each other. For those students who are unable to pass the regular army physical examinations, special setting up exercises and light games are given. This work is under the special supervision of the Military

Authorities. The equipment for the above athletics is furnished by the Athletic Association free of charge. The games are under the direct supervision of the Coaching staff and the Commandant. This provides every student with equal chance in the games, and gives him the benefit of proper instruction along athletic lines.

Hugh Inman Grant Field.

Due to the liberality of Mr. John W. Grant, of Atlanta, the new Athletic Field, named "The Hugh Inman Grant Field," as a memorial to his son, is now finished and in constant use.

This gives us the finest Athletic Field in the South, and the completion of the new concrete grandstand furnishes accomodation for seating over 6,000 spectators. The field has a quarter-mile running track, room for a 220 yard straight away track, for sprints, two baseball diamonds two football fields, tennis court, pole vaulting and jumping paths and accommodations for all other forms of field sports.

The plans of the Field are shown in the campus view frontispiece. It is planned to erect here in the near future a gymnasium with basketball and volleyball courts, a large swimming pool, locker rooms, wrestling and boxing rooms and complete gymnastic equipment. When this is done the students at Georgia Tech will have the advantages of an athletic field and gymnastic equipment inferior to none in the country.

PUBLICATIONS

The Technique is the college newspaper. It is published weekly by the students. Its purpose is to give the college news, discuss student enterprises, and to promote the general welfare of the school; to serve the institution, in short, along the same lines as the daily newspaper serves the community.

The Blue Print, the College Year Book, is published annually by the students, and contains the usual matters of interest relative to student life.

The Students' Hand-Book is published annually under the auspices of the School Y. M. C. A., contains information referring to student organizations, college customs, etc; intended primarily for new students.

The School publishes five bulletins annually, in January, April, July. August and October

TECHNICAL SOCIETIES

Civil Engineering Society

Only C. E. Seniors and certain elected C. E. Juniors are eligible to membership in this society. The meetings are held bi-monthly, and are often addresed by resident or visiting engineers of well-established reputation.

Architectural Society

All Architectural students who have completed the first term of the Sophomore year are eligible for membership. Prominent local architects frequently address the monthly meetings. Prizes are offered for the best work in Design, and a creditable library of drawings from architectural books has been formed.

Society of Mechanical Engineers

The society is for Seniors, with a few elected Juniors to form a nucleus for the following year. The plan is to meet bi-monthly, at which meetings engineering sujects are discussed by the members, and also frequently by Engineers of experience. Special trips and outside investigations by the members are a feature of the proceedings. The Society has recently become a branch of the American Society of Mechanical Engineers.

Emerson Chemical Society

The membership consists of the Senior, Junior and Sophomore Classes in the Chemical Course. The Faculty of the Chemical and Geological Departments of the School and all graduates of the Department of Chemistry are honorary members. At the weekly meetings, papers are presented by the students. Once a month the Society is addressed by members of the Faculty and by Professional Chemists.

Electrical Engineering Society

This Society is a branch of the American Institute of Electrical Engineers.

Membership is taken from the Senior and Junior students in the Electrical Engineering Course. Original papers are presented and articles from current electrical literature are abstracted and discussed. Lectures are given the Society by practicing engineers.

Textile Engineering Society

Senior and Junior Textile students are eligible to membership. Other students in the textile department may be elected to membership. Regular meetings are held on the first and third Wednesdays of each month at which papers are read by members. Lectures by visitors prominent in the textile industry are arranged from time to time.

SCHOLARSHIPS AND PRIZES

The A. French Scholarships

Mr. Aaron French, of Pittsburgh, Pa., gave three scholarships to the Georgia School of Technology, which are self-perpetuating, in that the beneficiary refunds the money after graduation in payments of small monthly notes without interest.

The conditions under which the scholarships are awarded are as follows:

1. The applicant must be at least sixteen years of age.

2. No one is eligible whose family pays taxes on more than $3,000 worth of property. (Affidavits from city and county tax collectors to this effect are required.)

3. The scholarships are to be awarded by competitive examinations in the subjects for entrance to the Freshman Class.

Scholarship No. 1

The competitive examination for scholarship No. 1 was held at the school in the fall of 1898 and was won by W. E. Klein, of Atlanta, who graduated in 1902. The scholarship has since been held by Mr. W. C. Appleby, of Winder, Ga., who graduated in 1906, by Mr. W. M. Fellers of Jacksonville, Fla., who graduated in 1910, by Mr. R. S. Howell, of White Plains, Ga; who graduated in 1914, and by Mr. G. H. Sparkes, who graduated in 1915, and by Mr. H. C. Kenemer, who graduated in 1917. In 1918 the scholarship was awarded to J. W. Walker.

Scholarship No. 2

The competitive examination for scholarship number two was held at the school Wednesday, September 26 1900, under the conditions named above and was won by Mr. G. A. Harbour, of Atlanta, who graduated in 1904. It has since been held by G. W. Gibbs, of St. Augustine, Fla; who graduated in 1908, by Mr. D. S. McLaurin, of Jacksonville, Fla; who graduated in 1912, and by Mr. A. C. Strother, who graduated in 1917.

Scholarship No. 3

The competitive examination for scholarship number 3, was held at the School September 24, 1902, and was won by Mr. Arnold Wells, of Belton Texas, who graduated in 1906. It has since been held successively by Mr. A. J. Phillips, of McRae, Ga., who resigned before graduation, Mr. A. E. Kunze, of Newnan, Ga; who graduated in 1912, and by Mr. J. E. Thompson, who resigned before graduating, and by George Y. Brown, Jr.

Scholarships are Limited to No State or Section of the Country.

The winner of these scholarships will be furnished funds at such time as the President may think necessary for expenses, books, fees, etc; but not over $125.00 will be furnished each year.

No formal application for entrance to the competitive examination is necessary. The presence of the applicant at the School at 9 a. ma. on the opening day of the fall term, will entitle him to admission to the examinations.

T. W. Smith Scholarship

On January 27, 1906 Mr. T. W. Smith gave a scholarship to the School, self-perpetuating on the basis of the French scholarships, and allowing the successful canidate $150 per annum for a period of four years. In the competitive examination held September 20, 1906, Mr. M. C. Meadows, of Carrollton, Ga; won the scholarship, but left before graduation, since which time the scholarship has been allowed to lapse. The amount paid on the scholarship, however, is used as a loan fund to deserving students of limited means.

The E. P. McBurney Scholarships

In March, 1909, Mr. E. P. McBurney, of Atlanta, established three scholarships also self-perpetuating, on the basis of the French scholarships, beneficiaries to the appointed by the donor and president, and each scholarship to pay $200 per year for four years.

In March, 1909, Mr. T. D. Guinn, of Cuthbert, Ga; was awarded Scholarship No. 1. He was succeeded by Mr. R. A. Clark in September, 1912, and by Mr. J. T. Mitchell in September, 1915, and by James MacDonald in September, 1917.

In September, 1909, Mr. W. D. Evans, of Fort Screven, Ga; was awarded Scholarship No. 2. He was succeed in September 1914, by Mr. J. C. Jones, of Corinth, Miss, and by Mr. W. A. Wilcox in 1917.

In September, 1909, Mr. H. J. Crider, of St. Simon's Island, Ga; was awarded Scholarship No. 3. On his withdrawal from school, June 8, 1911, Mr. W. P. Hammond, of Atlanta, was awarded the scholarship. In September, 1913, this scholarship was awarded to Mr. W. M. Hawkes, of Americus Ga; and in September, 1916, to A. D. Whittaker, and in Feburary, 1918, to Mr. A. S. Howell.

In July, 1913, Mr. McBurney decided to establish three additional scholarships, similar in amount and operation to the three already established by him.

In September, 1913, No. 4 was assigned to Mr. Rex Powell, Vienna, Ga; in 1917, to Mr. E. C. Gartner, and in 1918 to John G. Nelms of Hartwell, Ga.

No. 5 was assigned to L. C. Evans, of Jonesboro, Ga; in 1914 to Mr. F. L. Jones, and in 1917, to Mr. H. L. Turner.

No. 6 was assigned to Mr. G. W. Tutan, of Savannah, Ga; and in 1917 to Mr. T. H. Hall.

The Joseph Madison High Scholarship

In October, 1910, Mrs. J. M. High, of Atlanta, established a scholarship, to be known as the Joseph Madison High Scholarship, to carry $200 per year for four years, and to be self-perpetuating on the basis of the McBurney Scholarships. When possible, the beneficiary is to come from Morgan County Ga; the former home of Mr. High.

On October 25, 1910, Mr. J. O. Clarke, of Atlanta, Ga; was awarded the Scholarship. It has since been held by Mr. H. L. Henry of Atlanta, by Mr. C. W. Shackleford, of Rutledge, Ga; and by Mr. J. C. Staton, of Atlanta.

The M. R. Berry Scholarships

In July, 1913, Mrs. Fannie B. Wright, of Atlanta, established three scholarships, self-perpetuating, on the basis of the E. P. McBurney Scholarships, and named them The M. R. Berry Scholarships, in memory of her father, who for many years was an honored influential and beloved citizen of Atlanta. In September 1913, the following beneficiaries were appointed: No.1, Mr. E. M. Upshaw, Rydal, Ga; No.2, Mr. E. E. Hardin, Monticello, Ga; No.3, Mr. J. M. Battson, Mt. Berry, Ga; No. 2 was later held by Mr. C. C. Jones, and No.3 by Mr. E. T. Mathis, who succeeded Mr. H. M. Flanagan in September, 1916. In September, 1917, No. 1 was assigned to Mr. H. L. Richards; No. 2 to Mr. S. Y. Guess, and No. 3 to Mr. R. H. Taliaferro.

The I. S. Hopkins or First President's Scholarship

In July, 1914 a friend of the school established what is to be known as The I. S. Hopkins, or First President's Scholarship. The full amount not being paid, this scholarship has been allowed to lapse and is being used as a loan fund to deserving students.

The Architectual Scholarship

The Georgia Chapter of the American Institute of Architects has established a self-perpetuating scholarship open to students in the two upper classes who may be in need of financial assistance. The beneficiary refunds the money after graduation in payments of small monthly notes without interest.

The Ad Men's Scholarships

In Feburary, 1915, the Ad Men's Club of Atlanta, established two scholarships, one by the organization and one by personal subscriptions of certain members. These are loan scholarships, similar in operation to those described above. They went into effect in September, 1916. These scholarships are administered by the Ad Men's Club direct.

The Clark Thornton Scholarship

In September, 1914, Mr. R. M. Angas, Mr. J. J. Apple, Mr. B. S. Brown, Mr. H. M. Corse, Mr. W. H. Cowan Mr. F. C. Davies, Mr. J. G. Holtzclaw, Mr. H. H. Leech, Mr. O. H. Longino, Mr. L. B. Mann, Mr. G. T. Marchmont, Mr. C. W. Pittard and other members of the class of 1907 established a scholarship to be called the Clark Thornton Scholarship in memory of a former member of their class. The beneficiary of this scholarship, which is established on the basis of the E. P. McBurney scholarships, is to receive $150 annually.

This scholarship was awarded in September, 1914 to Mr. W. T. McCullough, Jr; of Atlanta, and in 1915 to Mr. H. W. Cheney. This scholarship has never been completed.

The Lona Mansfield Scholarship

In September, 1916, Mr. J. B. Mansfield, of Detroit a former student of the Georgia School of Technology, established a scholarship which is to be known as The Lona Mansfield Scholarship. The beneficiary of this scholarship is to receive $250.00 per year for four years. It is held at present by Mr. Marvin S. Wimberly, of Ft. Gaines, Ga.

Du Pont Scholarship

In 1918, the E. I. Du Pont de Nemours & Company, of Wilmington, Del; established a scholarship amounting to $350.00 a year to assist students in Chemistry. The funds are available for use of deserving Seniors to be elected by the Department of Chemistry. In 1918-19 the scholarship was assigned to George D. King, of Decatur, Ga; in 1919-20 to Edward C. Link, of Atlanta, Ga., and in 1920-21 to L. R. Harbaugh.

Dr. and Mrs. Thomas P. Hinman Scholarship

This scholarship was established in October, 1916 by Dr. and Mrs. Thomas P. Hinman, of Atlanta. The beneficiary of this scholarship is to receive $200.00 per year for four years. It was held one year by Mr. W. C. Mathes, of Jonesboro, Ga. After that time the scholarship was allowed to lapse, the amount on hand being used as a loan to students.

The Louis Gholstin Johnson Scholarship

In October, 1917, Mr. Edwin F. Johnson, of Atlanta, established a self-perpetuating loan scholarship paying $200.00 per year. This scholarship, which has been named, in honor of Mr. Johnson's son, The Louis Gholstin Johnson Scholarship, has been held by Mr. J. M. Robinson, of Montezuma, Ga., and by Mr. C. S. Carter of Lilburn, Ga.

The Lyman Hall Scholarships.

In 1920 Mr. Harleston J. Hall founded two scholarships in memory of his father, the former President of the school. These scholarships amount to $700.00 each and are available to Juniors for use in their Junior and Senior years. These are intended to be self perpetuating after the plan of the McBurney scholarships. Mr. W. E. George and Mr. A. P. Markert were given the benefit of these scholarships in 1920-21.

Scholarships to Local High Schools

By action of the Board of Trustees a scholarship is awarded each year to an honor graduate to each of the following public high schools in the City of Atlanta: The Technological High School, The Boys' High School, and the Fulton County High School. The scholarships pay the fees of the recipients, except the Student Activities fee, which is required of all students.

W. L. Peel Prizes

Each year there are awarded as prizes to the ten men of the Junior Class who have attained the highest academic average for the past two and one-half years, a gold "T." These are given through the generosity of Col. W. L. Peel, of Atlanta, and are named in his honor.

Andrews Oratorical Medal

Through the generosity of Mr. Walter P. Andrews, a public spirited citizen and a friend of the School, a handsome gold medal will be awarded each year to that member of the Freshman Class who shall deliver in public contest, during the period of Commencement, the best original oration upon some subject approved by the English Department. The winner of this medal will be announced on the evening of the contest, but the presentation of it will be made at the regular Commencement Exercises.

Masonic Medal

The Scottish Rite of Freemasonary of Atlanta, as an incentive for excellence in composition, offers annually a handsome gold medal,

to be awarded at Commencement, to that member of the Freshman class who shall have demonstrated his accomplishment by writing the best essay submitted in a contest open to all members of that class.

Military Prizes and Trophies

Through the generosity of Tech's many friends it is possible to award various prizes and trophies for excellence in the military activities.

The A. B. Steele trophy a handsome silver cup, the gift of Mrs. Ray Powers and Mr. A. B. Steele, as a memorial to those "Tech" men who made the supreme sacrifice during the World War, is awarded annually to the best drilled company in the regiment. The letter of the winning company and the name of the company commander are engraved on the cup.

A handsome regulation Army presentation saber is the gift of the "Tech" Athletic Association to the member of the regiment who does most to promote and develop military activities during the year.

The Regimental Colors are presented to the company that wins the greatest number of points during the year. That company is designated as the "Color Company" for the succeeding year. Points counting on this competition are awarded for company and individual excellence in football, basketball, baseball, tracks events, target practice, military science and tactics, military competitions, etc.

The Athletic Association awards a jersey with the appropriate company letter to each member of a company team winning the regimental championship in any one of the various branches of athletics.

A gold medal of special design is awarded to the member of the regiment who during the year accomplishes most for regimental athletics. Gold, silver, and bronze medals are awarded for excellence in the following:

Rifle Firing.
Senior Advanced Military Course.
Junior Advanced Military Course
Sophomore Basic Military Course.
Freshman Basic Military Course.
Best records in summer camps.

Twenty-two medals in the form of favors are awarded to the chaperons and sponsors who serve with the organizations of the regiment during the year. The foregoing medals are the gifts of Messrs. L. W. Robert, Y. F. Freeman, Bryan Grant, and A. G. Allen, the first two being alumni of "Tech."

The Honor Society of the Phi Kappa Phi.

Among the prizes offered for scholarship by the Georgia School of Technology perhaps the most coveted is membership in the honor society Phi Kappa Phi, to which a limited number of seniors representing all departments are elected annually. Phi Kappa Phi is a national organization with branches or chapters in many Northern Southern, Eastern and Western universities and colleges; and wherever it has been established it has proved a stimulus not only to

scholarship but to all-round manhood. Its members are men of books, of affairs, and of character, its aims coinciding accurately with those of the Georgia School of Technology as set forth in the motto, "To know, to do, to be."

GENERAL REGULATIONS

Sessions and Terms

The session begins the next to the last Wednesday in September and continues for thirty-seven weeks from the following Monday. It will be divided into two nearly equal terms. There will be an intermission at Christmas, as indicated in the Calendar.

All students are required, and all applicants are requested, to be present at the opening hour of each session, as punctuality operates to their advantage in many ways.

Tuition and Fees.

All checks for fees, board, or other deposits should be made payable to The Georgia School of Technology.

By a law of the State, the fees for each term must be paid in advance before the day on which the term opens.

The three classes of fees are as follows:

I For students who hold county scholarships, and whose parents are legal residents of Georgia.

First Term.		Second Term	
Semi-annual fee	$15.00	Semi-annual fee	$15.00
Student Activities	6.50	Student Activities	6.50
Medical Fee	5.00	Medical Fee	5.00
Deposit for damage	5.00		
	$31.50		$26.50

II For students who do not hold county scholarships, and whose parents are legal residents of Georgia:

First Term.		Second Term	
Tuition	$12.50	Tuition	$12.50
Fees as above	31.50	Fees as above	26.50
	$44.00		$39.00

III For students whose parents are not legal residents of Georgia:

First Term		Second Term	
Tuition	$62.50	Tuition	$62.50
Fees as above	31.50	Fees as above	26.50
	$94.00		$89.00

Each county in the State of Georgia is entitled to fifteen free scholarships. When there are over fifteen students from any county, the fifteen who shall be exempt from tuition are determined as follows: 1st. Those who have been registered longest. 2nd. From a group who have been registered an equal time, those who are in the highest class. 3rd. Class standing shall determine the preference among those who have been here the same period of time and who are in the same class.

The semi-annual fee of $15.00 per term is to cover the various incidental expenses in connection with the operation of laboratories, class rooms, and shops. It is required of all students.

The Student Activities fee of $6.50 per term has been recently added at the request of the Student Body and the Alumni. The payment of this fee is really a matter of economy to the student, since it covers subscription to all student publications, membership in the Y. M. C. A., membership in the Athletic Association, and a pass to all the athletic games. This fee is collected for the student associations as a matter of accommodation. None of it goes into the School treasury.

The medical fee of $5.00 per term is required of all students who do not reside at their homes. This fee entitles the student to the benefits of the hospital including the services of a physician and a nurse. Chronic cases and those requiring a surgical operation are not included in the above.

Each member of the Senior Class must pay a diploma fee of $5.00 before graduating.

Examinations at other than the regular examination times will be granted in exceptional cases only and by Faculty action. A fee of $2.00 will be charged in all such cases.

A fee of $2.00 will be charged to old students reporting late for registration or payment of fees, without a valid excuse.

Until the above requirements are complied with, no student will be allowed to participate in the duties and privileges of his class.

The student is advised to defer the purchase of drawing instruments and materials until he can have the direction of the professors in their selection. The prices range from $10.00 to $20.00.

Text books and stationery can be purchased from the School Quartermaster at reasonable rates. The student is advised, however, to bring such scientific books as he may possess. The books for a freshman usually cost from twelve to fifteen dollars.

No fees are refunded to students who are required to withdraw on account of conduct, or for failure in work, or who may withdraw for any reason, except for disabling sickness, properly certified to by a reputable physician. In the latter event, an equitably prorated amount will be refunded, provided the student is not able to return to the School before the end of the term in which he withdraws.

Contingent fees are not returned to any student unless he presents an order for the same from parent or guardian, saying he is to leave the School permanently. These fees are not returnable till the end of the school year.

Examinations.

Final examinations are held at the end of each term. Students are liable to be dropped from the roll of their classes at any examination, when they do not meet the requirements, as well as at any time when they neglect their studies and fall hopelessly behind their classes. No tuition or fees are refunded under such circumstances. All examinations are written.

Reports

Reports of the standing of students are issued at the close of each term.

Monthly reports of students whose work is unsatisfactory in any subject are posted on the bulletin boards in the halls of the Academic Building, and copies of such reports are mailed to parents.

Dormitories

All students in the Freshman Class who do not reside with their parents, near relatives, or bona fide guardians legally appointed, are required to board in the School Dormitories as far as they can be accommodated. This regulation was passed by the Board of Trustees, after a careful examination of the advantages and protection afforded by the dormitories to students of the Freshman class, and all such students as are physically or otherwise unable to comply with the law, will not be retained in the School.

Ordinarily two are assigned to a room, and students of the higher classes will not be accommodated in the dormitories until all eligible lower classmen have been assigned rooms. Students to the number of sixty, living in the vicinity of the School, however, will be accommodated with table board in the dining hall at the lowest co-operative price possible. —the privilege to be accorded in the order of application.

Living Expenses

(Make all checks payable to Georgia School of Technology and mail remittances to F. K. Houston, Bursar).

The School is provided with dormitory accommodations for three hundred students.

Board, including laundry, fuel, lights, is furnished at cost, and must be paid monthly in advance. The cost which depends on the prices of food, fuel, and other commodities is estimated not to exceed $27.00 per month for 1920-21, and it is hoped that it may be kept below this figure. Parents of prospective students will be given more definite information as the time for the opening of the next session approaches.

Money paid for board is not refunded to students unless they have been absent over fourteen consecutive days on account of sickness properly certified to; or unless they withdraw from school. This law is necessary on account of the fact that the dormitories are conducted under a system of fixed charges.

Any student who desires a room in the dormitories must write and secure it before reporting for duty, as the dormitories accommodate scarcely one-fourth of the students who are in the institution. In order to secure a room, each student must deposit $27.00, one month's board, with the President not later than September 1st. Applications are listed in the order in which they are received. Those who apply early will be sure of a reservation. In case the student finds it impossible to enroll, the fee will be refunded provided notice is given the President not later than September 15th.

Students who board in the dormitories are required to furnish the following articles: One pillow, three pillow cases, four sheets, blankets or comforts, six towels, and other small and portable articles needed about their rooms. The articles named should be brought from home. The school furnishes with each room: Beds (single three-quarter width), mattresses springs, wardrobe, or closet, washstand, bureau, and table.

Each student should have two suits of overalls, costing $3.00 to $4.00 each.

The cost of equipment in the Freshman year is relatively large on account of the purchase of drawing instruments.

Entrance Requirements

The requirements for admission to the Georgia School of Technology are as follows:

The applicant must be not less than 16 years of age, and must present a certificate from the last school attended, showing his scholastic record, and that he is of good moral character.

For entrance to the Freshman Class **without condition,** every applicant must present 15 or more units, and if he is to enter without examinations, his certificate must show that he is a **graduate** of an accredited school.

At least 14 units must be offered at entrance. A condition in Mathematics or Physics must be made up before entering the Sophmore Class. Any other units due must be made up before entering the Junior Class.

Specified Units		Optional Units	
It is very important that all of these be presented on entrance.		History	½ to 2
English Grammar	1	Civics	½ to 1
Composition and Rhetoric	1	Latin	2 to 3
English Classics	1	Greek	2 to 3
Elem. Algebra*	1½	German	1 to 2
Adv. Algebra	½	French	1 to 2
Plane Geometry	1	Spanish	1 to 2
Solid Geometry	½	Chemistry	½ to 1
History	1	Biology	½ to 1
Physics	1	Botany	½ to 1
		Physiology	½ to 1
		Phys. Geography	½ to 1
		Gen. Science	½ to 1
		Drawing	½ to 2
		Commerce	½ to 3
		Manual Training	½ to 2
Total	8½	Agriculture	½ to 2

In addition to the specified units, the applicant must present enough of the optional units to make up his total of 15 units.

Special attention is called to the required units in Algebra, as a great many students are conditioned in this subject. To receive entrance credit, for the ½ unit in **Advanced Algebra** the course must

*Students registering in the School of Commerce are not subject to the full requirements in Mathematics and Physics. In addition to the required units in English and History, they must present one unit in Algebra, one in Plane Geometry or Shorthand or Bookkeeping and one in a Natural Science.

have included Logarithms, Ratio and Proportion, Binominal Theorem, Progressions and Partial Fractions.

We wish to urge that the students have a good command of all of the Mathematics required for entrance. It frequently happens that members of the freshman class must be turned back to review their foundation work in Algebra and Geometry.

There are two ways of presenting the units required for admission to the Georgia School of Technology.

1. **By examinations.**

Two general entrance examinations will be held: One at the time of the final examination for the school session, and the other at the opening of the fall term. Applicants for admission to Freshman and higher classes will be admitted to either or both of these examinations.

Canidates for Freshman Class not graduates of accredited High Schools, may stand entrance examinations at their local schools about June 1st. For full particulars address the Registrar Georgia School of Technology.

Subjects passed satisfactorily in May-June Exxaminations will be credited on the admision in September.

2 **By Certificate.**

The Faculty of the Georgia School of Technology desires to bring the school into closer relations with the High Schools of the State, hoping thereby to make the transition from the latter to the former easier for the student. Therefore, the privilege of becoming accredited, by which graduates of schools can enter without examinations, is extended to those High Schools on the accredited list of the University of Georgia.

Definition of Unit

A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of the full year's work. This statement is designed to afford a standard of measurement for work done in secondary schools. It takes the four-year high school course as a basis and assumes that the length of the school year will be approximately thirty-six weeks, that a period is at least forty minutes, and that the study is pursued for four or five periods a week; but, under ordinary circumstances, a satisfactory year's work in any subject can not be accomplished in less than one hundred and twenty sixty-minute hours, or their equivalent. Schools organized on a different basis can nevertheless, estimate their work in terms of this unit. Less than forty minutes for recitation will reduce the unit value. The subject may cover more than one year, according to the pleasure of the teacher arranging courses. The time element counts on the certificate as well as in the quanity of work. As a general rule, four units a year is as much as the average pupil can prepare adequately at one time.

Principals or superintendents will send to the Registrar of the Georgia School of Technology the certificate of such students in their schools as desire to enter. This should be done in June. Blank certificates may be obtained from the Registrar. The student must present himself for admission within one year after leaving the high school.

The work done by its graduates is ultimately the genuine test of the character of the preparation given by a high school. If, therefore the student accepted from an accredited school should be found

deficient in preparation, that school must except to be dropped from the list.

Discipline and Domitory Regulations

The students of the school have a record for good conduct unsurpassed by any corps in the country. They are required to obey but few regulations, the authorities bearing in mind the development and best interest of the student body.

Every man is expected to conduct himself in a gentlemanly manner. When he fails in this and convinces the authorities that he has not come to work, his parents are requested to withdraw him.

Special Textile students and students having but few lessons to prepare will not be admitted to the domitories.

Patrons or prospective patrons will be furnished upon application with the printed Rules and Regulations of the School.

Changes of Courses and Withdrawals

Changing from one course to another, in some special cases, is highly advisable, but if the change is merely to satisfy the foolish whim of some student it is to be discouraged. In all cases where the student wishes to change his course or to withdraw from the School, he must file written permission from his parent or guardian to this effect.

ACCREDITED FOUR YEAR HIGH SCHOOLS.

GEORGIA LIST, 1921.

On action of Chancellor Barrow, the University Committee on accredited schools has been enlarged to include the following: Stewart, Hooper, Fain from the University Faculty; Dean Jack, Dean Farrar, Caldwell from the College Association; Rowe and Monts officers of the High School Association; Pound from the State Department. Correspondence regarding accrediting should be addressed to J. S. Stewart, Athens, Ga.

Note:—Schools with star in front of the name indicate those that have won a place on the Southern List of Accredited Schools as well as in Group 1 of the Georgia list. Group 1 represents the best schools in teaching staff; equipment of laboratory, library and building. Group II represents those schools that have inadequate equipment in laboratory, library, and do not always have three fourths of the teachers college graduates, but offer fifteen units.
Schools for girls only are omitted from this list.

School	Principal
Abbeville High School, I	Luther M. Wilson.
Adairsville High School, II	Joseph W. Lee.
Adel High School, II	G. E. Usher.
*Albany High School, I	R. E. Brooks.
*Americus High School, I	J. E. Mathis.
Third District Agricultural School, 1	J. M. Prance.
Arlington High School, II	Jno. H. Morrison.
Ashburn High School, I	V. V. Morgan.
*Athens High School, I	E. B. Mell.

Atlanta:	
*Boys High School, I	H. O. Smith.
Commercial High School, I	Annie T. Wise.
*Fulton High School, I	Guy A. Moore.
*Marist College I (private)	J. A. Horton.
*Technological High School, I	W. A. Sutton.
*University School, I (private)	W. H. Evans & W. T. Turk.
Auburn:	
Christian College Academy, I (private)	John V. Thomas.
Augusta:	
*Richmond Academy, I	Geo. P. Butler.
*Bainbridge High School, I	S. J. Underwood.
Baldwin High School, II	C. S. Hubbard.
*Barnesville: Gordon Institute, I	E. T. Holmes.
Sixth District Agricultural School, I	T. O. Gallaway.
Baxley High School, I	S. E. Denton.
Blackshear High School, I	J. B. Campbell.
Blakely High School, II	V. P. Folds.
Boston High School, II	R. I. Knox.
Bowman: Gibson-Mercer Academy, II (private)	Lawson E. Brown.
*Brunswick: Glynn Academy, I	Charles E. Dryden.
Buchanan High School, II	D. E. Pennington.
Buford High School, II	W. N. Nunn.
Buena Vista High School, II	H. L. Lawson.
Cairo High School, I	S. C. Haddock.
Calhoun High School, II	M. C. Allen.
Camilla High School, I	E. Hackett, Jr.
Canton High School, I	O. H. Hixon.
Carrolton: High School, I	J. N. Haddock.
Fourth District Agricultural School, I	I. S. Ingram.
*Cartersville High School, I	L. C. Evans.
*Cedartown High School, I	J. E. Purks.
Chickamauga High School, II	W. A. Wiley.
Chipley High School, I	J. C. Sorrells.
Clarksville:	
Ninth District Agricultural School, I	C. A. Wells.
Claxton High School, II	A. H. Stephens.
Clermont:	
Chattahoochee Academy, II (private)	J. W. Adams.
Cochran High School, I	W. E. Monts.
College Park:	
College Park High School, I	L. O. Freeman.
*Georgia Military Academy, I (private)	J. C. Woodward.
Columbus:	
*High School, I	T. C. Kendricks.
Secondary Industrial School I	F. P. Bradford.
Comer High School, II	W. P. Smith.
*Commerce High School, I	H. B. Carreker.
Conyers High School, I	J. S. Fleming.
*Cordele High School, I	J. M. Collier.

Cornelia High School, II ..... J. W. Marion.
*Covington High School, I ..... H. B. Robertson.
Crawfordville: Stephens Institute, I ..... J. D. Nash.
Cuthbert High School, II ..... R. G. Hall.
Dallas High School, II ..... W. F. Tribble.
*Dalton High School, I ..... J. H. Watson.
Danielsville: Madison Co. High, II ..... R. T. Baker.
Darien High School, II ..... S. A. Cooper.
Dawson High School, I ..... J. C. Dukes.
Decatur High School, I ..... G. W. Glausier.

Demorest:
Piedmont Academy, I (private) ..... J. C. Rogers.
Donaldsonville High School, II ..... J. F. Goree.

Douglas:
11th District Agricultural School, I .... J. F. Thrash.
Douglasville High School, II ..... E. D. Gunby.
*Dublin High School, I ..... W. P. Martin.
Eastanollee High School, II ..... Carl Seagraves.
Eastman High School, I ..... C. O. Stubbs.
Eatonton High School, I ..... J. F. Muldrow.
Edison High School, II ..... A. W. Strozier.
*Elberton High School, I ..... B. M. Grier.
Ellaville High School, II ..... J. T. Henry.
Fairburn High School, II ..... L. M. Hobgood.
Fayetteville High School, II ..... L. M. Lester.
*Fitzgerald High School, I ..... E. G. Hall.
Folkston: Charlton Co. High, II ..... John Harris.
Forsyth High School, I ..... F. M. Hunter.
Fort Gaines High School, II ..... Jas. W. Bonner.
*Fort Valley High School, I ..... Ralph Newton.

Gainesville High School, I ..... J. A. Mershon.
*Riverside Academy, I (private) ..... Sandy Beaver.
Girard High School, II ..... W. B. Lovett.

Granite Hill:
10th District Agricultural School, II .... *E. C. Merry.
Grantville High School, II ..... A. A. O'Kelley.
Gray High School, I ..... U. S. Lancaster.
Graymont-Summit High School, I ..... Ernest Anderson.
*Greensboro High School, I ..... C. C. Wills.
*Griffin High School, I ..... F. Cumming.
Hartwell High School, I ..... J. I. Allman.
Hawkinsville High School, I ..... M. W. Harris.
Hazlehurst High School, II ..... R. P. Pitts.
Hephzibah High School, II ..... W. G. Robertson.
*Jackson High School, I ..... L. D. Watson.
Jefferson: Martin Institute, II ..... L. F. Elrod.
Jesup High School, II ..... H. S. Burdette.
Jonesboro High School, II ..... J. T. Lowe.
Kirkwood High School II ..... W. M. Rainey.
LaFayette High School, II ..... D. H. Perryman.
*LaGrange High School, I ..... F. F. Rowe.
Lavonia High School, II ..... Lamar Ferguson.

*Deceased.

Lawrenceville High School, I ..... A. R. Jordan.
Lithonia High School, II ..... H. E. Nelson.
*Locust Grove Institute, I (private) ..... Claude Gray.
Loganville High School, II ..... C. E. Hawkins.
Louisville High School, I ..... J. H. Greene.
Lumpkin High School, II ..... W. H. Martin.
Lyons High School, II ..... J. F. Williams.

Macon:
*Lanier High School, I ..... Walter P. Jones.
Rutland High School, II ..... W. H. Sorrells.
*Madison: High School, I ..... J. H. Purks.
8th. District Agricultural School, I ..... B. F. Gay.
Manchester High School, I ..... M. O. McCord.
Marietta High School, I ..... C. A. Keith.
Marshallville High School I ..... W. E. Queener.
McDonough High School, II ..... A. R. Woodson.
Meigs High School, II ..... W. J. Chisholm.
Metter High School, I ..... T. M. Purcell.

Milledgeville:
*Georgia Military College, I ..... Kyle T. Alfriend.
Millen High School, I ..... F. A. Brinson.
Monroe: High School, I ..... C. W. Reid.
5th. District Agricultural School, I ..... J. H. Walker.
Montezuma High School, I ..... L. D. Corbitt.
Monticello District School, II ..... C. R. Wallace.
*Moultrie High School, I ..... J. H. Saxon.

Mount Berry:
The Berry School for Boys, I (private) .. G. Leland Green.

Mount Vernon:
*Brewton-Parker Institute, I (private) .... L. S. Barrett.
Mount Zion Seminary, II ..... John Schneider.
*Newnan High School, I ..... B. F. Pickett.
*Norman Park Institute, I (private) ..... L. H. Browning.
Ocilla High School, II ..... J. C. Bowie.

Oxford:
*Emory Academy I (private) ..... J. A. Sharp.
Pavo High School, I ..... G. G. Singleton.
Pelham High School, I ..... T. N. Wilkinson.
Perry High School, II ..... J. M. Gooden.

Powder Springs:
7th District Agricultural School, I ..... H. R. Hunt.
*Quitman High School, I ..... H. D. Knowles.
Reynolds High School, II ..... E. S. Joiner.
Richland High School, I ..... Guy Wells.
Roberta High School, II ..... H. R. Adams.
Rochelle High School, II ..... D. H. Standard.
Rockmart High School, II ..... Roy G. Vinson.
*Rome: High School, I ..... B. F. Quigg.
*Darlington Academy, I (private) ..... E. L. Wright.

Royston High School, II ..... R. H. Moss.
Sandersville High School, I .....J. F. Lambert.
Sautee: Nacoochee Inst., I (private) .....Rev. J. K. Coit.

Savannah:
*Senior High School, I .....W. B Gallaway.
*Benedictine School I (private) .....Rev. A. Gallaher.
Senoia High School, II ..... Geo. H. Hill.
Shellman High School, II .....Knox Walker.
Smithville High School, II .....T. A. Stanton.
Social Circle High School, II .....J. A. Kelley.
Sparks Collegiate Inst., I (private) ..... Leland Moore.
Sparta High School, II .....H. R. McLarty.
Springfield: Effingham Academy, I .....G. M. Futch.
St. Mary's High School, II .....H. B. Gray.
*Statesboro: High School, I .....R. M. Monts.
1st District Agricultural School, I.....E. V. Hollis.
Stillmore High School, II .....J. C. Langston.
Stone Mountain High School, II .....R. E. Carroll.
Swainsboro High School, I .....J. E. Ricketson.
Sylvania High School, II .....Stirling McCall.
Sylvester High School, I .....J. O. Kinnamon.
Tallapoosa High School, II .....A. L. Brewer.
Tennille High School, I .....G. G. Maughon.
*Thomasville High School I .....B. B. Broughton.
Thomson High School, I .....R. O. Powell.
*Thomaston: R. E. Lee Inst., I .....M. A. Smith.
*Tifton: High School, I .....A. H. Moon.
2nd. District Agricultural School, I ....S. L. Lewis.
*Toccoa High School, I .....Edmund Wroe.
*Valdosta High School, I .....A. G. Cleveland.
Vidalia High School, II .....W. L. Downs.
Vienna High School, II .....J. M. Harvey.
Villa Rica High School, II .....G. H. Coleman.
Waleska: Reinhardt Inst., I (private) .....T. M. Sullivan.
*Warrenton High School, I .....G. S. Roach.
Washington High School, I .....W. T. Foster.
Watkinsville High School, II .....C. C. Chalker.

Waycross:
*High School, I .....A. G. Miller.
Piedmont Institute, II (private) .....W. A. Carlton.
*Waynesboro High School, I .....J. T. Lance.
West Point High School, I .....W. P. Thomas.
*Winder High School I ..... J. P. Cash.
Winterville High School, I .....M. R. Ellington.
Woodberry High School, II .....R. H. Harris.
Wrens High School, I .....C. C. McCollum.
Wrightsville High School, II .....W. S. Branham.
Zebulon High School, II .....A. J. Hargrove.

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Credits for Advanced Standing

Students from recognized colleges who desire advanced credits should see that their certificates and other evidence of work done are such that the information required below can be obtained from them. By doing so, inconvenience and delay in entering will be avoided.

In all cases the grade made by the applicant and the required passing grade should be given. The various departments will expect detailed information as outlined below:

Class Room Work:

(1) Text books used, and portions omitted, if any.

(2) The total number of hours given to recitations.

(3) In English courses, also, the number of themes and longer essays, and a list of the parallel reading.

(4) In Modern Language courses, also the amount of composition work, and the number of pages of both literary and scientific prose translated.

(5) In courses in Drawing, also, the drawings should be submitted, each approved by the instructor.

Laboratory and Shop Work:

(1) The manual used.

(2) The total number of hours given to laboratory work, and the number of experiments required.

(3) The note book, approved by the instructor should be submitted.

(4) In shop work. the number of hours given to bench work, lathe work, etc., should be given, and the number of pieces of work completed.

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GENERAL INDEX

Accredited Schools, 184-188.
Admission Requirements, 182.
Advanced Credit, 189.
Andrews Medal, 177.
Appropriations, 32.
Architecture, 39-50.
Athletics, 171.
Automobile Engineering, 51.
Board and Expenses, 181.
Board of Trustees, 2-30.
Buildings, 36.
Calendar, 2.
Carnegie Library, 167.
Changes of Courses, 184.
Chemical Engineering, 53-61.
Civil Engineering, 62-70.
Class Lists, 14-29.
Class Memorials, 33.
College Athletics, 171.
Committees of Faculty, 11.
Commerce, School of, 71-87.
Co-operative Plan, 88-93.
Courses (see Departments).
Degrees Conferred, 12.
Department of
  Architecture, 39-50.
  Automobile Engineering, 51.
  Chemistry, 53-61.
  Civil Engineering, 62-70.
  Commerce, 71-87.
  Co-operative Plan, 88-93.
  Drawing, 94-97.
  Electrical Engineering, 98-105.
  English, 106-109.
  Experimental Engineering, 109-114.
  Geology, 114-116.
  Industrial Education, 116-122.
  Mathematics, 122-126.
  Mechanical Engineering, 126-139
  Mechanics, 136-139.
  Military Science, 139-143.
  Modern Languages, 143-146.
  Physics, 149-152.
  Textile Engineering, 153-165.
Discipline and Dormitory Regulations, 182.
Dormitories, 36-181.
Drawing, 94-97.
Electrical Engineering, 98-105.
Engineering Chemistry, 53-61.
Engineering Societies, 172.
English, 106-109.
Enrollment, 29.
Entrance Requirements, 182.
Equipment, 36, 40, 53, 63, 114, 127, 149, 154.
Examinations, 181-183.
Expenses, 179.
Experimental Engineering, 109-114.
Faculty and Instructors, 5.
Faculty Committees, 11.
Fees, 179.
French, A., Textile School, 153.
Freshman Class Roll, 22.
General Information, 30.
Geology and Metallurgy, 114-116.
Grant Field, 172.
Hall, Lyman, Lab. of Chem., 53.
High Schools, 184-188.
High School Scholarships, 177.
History and General Information, 30.
Holidays, 2.
Honor Court, 170.
Industrial Education, 116-122.
Junior Class Roll, 15.
Laboratories, 36, 53, 98, 149.
Library, 167.
Living Expenses, 181.
Masonic Medal, 177.
Mathematics, 122-126.
Mechanical Engineering, 126-139.
Mechanics, 136-139.
Medical Attendance, 167.
Military Prizes, 178.
Military Science, 139-143.
Modern Languages, 143-146.
Motor Transport School, 146-149.
Night School, 165.
Occupation of Parents, 29.
Officers of Administration, 3.
Peel, W. L. Prizes, 177.
Phi Kappa Phi, 178.
Physics, 149-152.
Power Station, 37.
Prizes, 177.
Publications, 172.
Reports, 181.
Requirements for Admission, 182.
R. O. T. C., 10.
Rockefeller Y. M. C. A., 37, 168.
Scholarships, 173.
School of Commerce, 71-87.
Senior Class Roll, 14.
Sessions, 2-179.
Shops, 127-128.
Societies, Engineering, 172.
Societies, Y. M. C. A., 168.
Sophomore Class Roll, 17.
Special Architecture Course, 40, 43.
Special Textile Course, 158.
Student Activities Fee, 180.
Student Societies, 172.
Students, Lists of, 14-29.
Summary of Enrollment, 29.
Summer School, 165.
Textile Engineering, 153-165.
Tuition and Fees, 179.
Units, Required for Entrance, 182.
University of Ga. 189.
Whitehead Memorial Hospital, 36, 167.
Withdrawal, 184.
Y. M. C. A., 37, 168.