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## The Municipal <br> University of Akron

Alkron, Ohio March, 1916

ANNUAL CATALOG

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1916
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PUBLISHED BY
THE MUNICIPAL UNIVERSITY OF AKRON

# Third Annual Catalog of The Municipal University of Akron 

$\overline{\text { And Forty-Fifth }}$
Annual Catalog of Buchtel College
$\qquad$

AKRON, OHIO
March, 1916

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## UNIVERSITY CALENDAR

1916

January 3, Monday, 7:30 A. M. - Class Work resumed.
January 18, Tuesday - Founder's Day, Senior Ashton Contest at 8:00 P. M.
January 14 and 17, Friday and Monday - Classification for Second Semester.
January 24-28-Final Examinations.
January 28, Friday, 5:00 P. M. - First Semester ends.
February 1, Tuesday, 7:30 A. M. - Second Semester begins.
February 18, Friday - Senior Promenade.
March 10, Friday, 7:30 P. M. - Sophomore Ashton Speaking Contest.
April 15, Saturday, 12:00 noon - Easter Recess begins.
April 25, Tuesday, 7:30 A. M. - Class Work resumed.
May 18, Thursday - General Student Elections.
May 26, Friday - Tree Day.
June 3, Saturday-Senior Vacation begins.
June 5-9-Final Examinations.
June 9, Friday, 8:00 P. M. - Junior Ashton Contest.
June 11, Sunday, 2:30 P. M. - Baccalaureate Service, Crouse Gymnasium.
June 12, Monday, 10:00 A. M. - Senior Class Day Exercises.
June 12, Monday, 8:00 P. M. - Junior Hop.
June 13, Tuesday, 3:00 P. M. - Out-of-door play by the Dramatic Study Club.
June 13, Tuesday, 8:00 P. M. - President's Reception.
June 14, Wednesday, 9:30 A. M. - Commencement Exercises.
June 14, Wednesday, 8:00 P. M. - Alumni Banquet.
$\left.\begin{array}{l}\text { September 18, Monday } \\ \text { September 19, Tuesday }\end{array}\right\}$ Registration and Classification.
September 20, Wednesday, 7:30 A. M. - Class Work begins.
September 28, Thursday - Freshman Elections.

November 30, December 1 and 2, Thursday, Friday and Saturday - Thanksgiving Recess.
December 15, Friday, 5:00 P. M. - Christmas Holidays begin.

1917
January 2, Tuesday, 7:30 A. M.- Class Work resumed.
January 18, Thursday - Founder's Day.
January 18, Thursday, 8:00 P. M. - Senior Ashton Contest.
January 19 and 22, Friday and Monday - Classification for Second Semester.
January 29 to February 2-Final Examinations.
February 2, Friday, 5:00 P. M. - First Semester closes.
February 6, Tuesday, 7:30 A. M. - Second Semester begins.
February 16, Friday - Senior Promenade.
March 9, Friday, 7:30 P. M. - Sophomore Ashton Speaking Contest.
March 31, Saturday, 12:00 noon- Easter Recess begins.
April 10, Tuesday, 7:30 A. M. - Class Work resumed.
May 17, Thursday - General Student Elections.
May 25, Friday - Tree Day.
June 9, Saturday - Senior Vacation begins.
June 11-15 - Final Examinations.
June 17, Sunday, $2: 30$ P. M. - Baccalaureate Service, Crouse Gymnasium.
June 18, Monday, 10:00 A. M.-Senior Class Day Exercises.
June 18, Monday, 8:00 P. M. - Junior Hop.
June 19, Tuesday, $9: 30 \mathrm{~A}$. M. - Junior Ashton Contest.
June 19, Tuesday, 3:00 P. M. - Out-of-door play by the Dramatic Study Club.
June 19, Tuesday, 8:00 P. M. - President's Reception.
June 20, Wednesday, 9.30 A. M. - Commencement Exercises.
June 20, Wednesday, 8:00 P. M. - Alumni Banquet.

## THE BOARD OF DIRECTORS

| Frank M. Coore | Term expires 1918 |
| :---: | :---: |
| James P. Loomis | Term expires 1918 |
| J. Asa Palmer | .Term expires 1918 |
| F. M. Harpham | .Term expires 1920 |
| Albert A. Kohler. | Term expires 1920 |
| Parke R. Kolbe | .Term expires 1920 |
| P. W. Litchfield | Term expires 1922 |
| Wm. H. Eager | .Term expires 1922 |
| Clyde F. Beery | .Term expires 1922 |
|  |  |
| F. M. Cooke | .Chairman |
| Charles R. Olin | .Cle |

## COMMITTEES FOR 1915

Committee on Finance: Loomis, Harpham, Palmer.
Committee on Investments: Cooke, Seiberling, Kohler. Committee on Buildings and Grounds: Carlton, Kolbe, Putt.

## ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

Parke R. Kolbe, Ph. D...... President of the University Charles R. Olin, M. S......Secretary of the University
Oscar E. Olin, A. M....... Vice President of the Faculty
M. Alice Rines, A. M.........Secretary of the Faculty

Albert I. Spanton, A. M
...............Dean of Buchtel College of Liberal Arts
Fred E. Ayer, C. E....Dean of the College of Engineering Sarah E. Stimmel, B. S.
.........Director of the School of Home Economics
Elizabeth A. Thompson, A. M..........Dean of Women
Frederick Sefton, B. S................. Physical Director
Rena B. Findley ................................... Librarian

## GENERAL FACULTY AND OFFICERS

1915-1916

Parke R. Kolbe, Ph. D.,
President of the University and Lecturer in Department of German Language and Literature.
President's House
Charles M. Knight, A. M., Sc. D., Professor Emeritus of Chemistry
129 South Union Street
Joseph C. Rockwell, Ph. D., Professor of Latin and Greek 58 Casterton Avenue

Oscar E. Olin, A. M., Messenger Professor of Economics and Philosophy and Vice President of the Faculty
125 North Forge Street
Albert I. Spanton, A. M.,
Pierce Professor of English and Dean of Buchtel College
407 Vine Street
Sidney J. Lockner, A. M., Ainsworth Professor of Mathematics and Physics
483 Orchard Court
Hezzleton E. Simmons, M. S., Buchtel Professor of Chemistry
448 Henry Court
Fred E. Ayer, C. E., Professor of Civril Engineering and Dean of the College of Engineering
401 Brown Street
Sarah E. Stimmel, B. S., Director of the School of Home Economics
169 Rhodes Avenue

Frederick Seftqn, B. S., Director of the Department of. Physical Education Jefferson Extension
Charles L. Bulger, A. M., Hilton Professor of German Language and Literature
84 Kirkwood Street
Amon B. Plowman, Ph. D., Professor of Biology
126 South Maple Street

- Max B. Robinson, M. E., Professor of Mechanical Engineering
(Appointed for 1916-191\%.)
X Charles R. Olin, M. S., Assistant-Professor of Mathematics and Secretary of the University
421 Spicer Street
Frank D. Sturtevant, A. M., Assistant-Professor of English
286 Brown Street
M. Alice Rines, A. M., Assistant-Professor of Romance Languages
- 256 Cable Place

Arden E. Hardgrove, B. S., Assistant-Professor of Chemistry and Director of the Bureau of City Tests
137 Highland Avenue
Elizabeth A. Thompson, A. M., Assistant-Professor of History and Dean of Women 146 South College Street
Carita McEbright, A..B., Instructor in Oratory
396 East Market Street
K. Dofbeer Smith, B. S.,

Instructo in chemistry and Manager of Student Aclivifies ${ }^{\text {Henfy }}$ Codrt Zunt
J. S. Mathewson, M. E., Instructor in Engineering
283 East'Buchtel Avenue

William F. Zimmerli, Ph. D.,
Instructor in Chemistry
84 Kirkwood Street
Edward yon Janinski, A. B., Instructor in German
84 Kirkwood Street
Albert Phelps Tuller, A. B.,
Instructor in Classics and French
197 Spicer Street
Henri Morin,
Instructor in French
75 Nebraska Street
Robert L. Sibley, A. M.,
Instructor in Chemistry
840 Ruth Avenue
Max Morris, A. M.,
Instructor in Mathematics
848 Rhodes Avenue
Julius Boeniscte,
Instructor in Architectural Drawing
30 North Summit Street
Luke S. Brickley, A. B:,
Instructor in English
259 Brown Street
Richard W. Evades, M. S. in E. E.,


Instructor in Physics and Electricity
483 Orchatd Street
Maripn F. Allchin, Graduate of Sargent School of Gymmastic.
Instructor in Physical Training for Women
34 Byers Avende
Isabel A. Bradley, M. D.,
Medical Examiner for Women
221 Ash Street
Lectures on Hygiene for women were given in 1915-16
by Dr. A. B. Plowman of the Department of Biology.
Benet \& Er.


STUDENT ASSISTANTS

| Raymond Warner | nistry |
| :---: | :---: |
| Dewey Lidyard | Biology |
| Bruce McAdoo | Biology |
| Clement Sickler | English |
| Louise Mignin | French |
| Florence Cruickshank | French |
| Eva Rohner | German |
| Josephine Cushman | Library |
| Ira Poules | Library |
| Elliott Geisinger. | City Tests |
| Burt Yackee | City Tests |

GENERAL STAFF
Rena B. Findley
.Librarian 112 South Maple Street
Gladys P. Weeks ............. Secretary to the President 248 South Balch Street
Anna F. Eisenbart
Secretary to the Dean of the College of Engineering 299 Cross Street
Mildred Lawrence ....................... Office Assistant Barberton
Fred H. Nestelle . ................... Janitor and Engineer 343 Margaret Street
Reuben Dean .......................................ireman 261 Carroll Street
H. Hood................. Ground Keeper at Athletic Field 415 Kling Street

## ORGANIZATION OF THE UNIVERSITY

 FACULTYParke R. Kolbe ................................................. Prident<br>Oscar E. Olin ................................. Vice President<br>M. Alice Rines .................................... . Secretary

committees of the faculty
1915-1916

Executive Committee
Kolbe, O. E. Olin, Spanton, Ayer
Classification and Records
Butchel College - Rockwell, Spanton, Bulger,
Simmons, Sibley, Morris
College of Engineering - Rockwell, Ayer
Curtis School of Home Economics - Rockwell, Stimmel
Public Speaking
Lockner, McEbright
Socials and Holiday Observances
Thompson, Stimmel, Sturtevant
Athletics
Ayer, Bulger, Sefton, C. R. Olin, K. D. Smith
Buildings and Grounds
C. R. Olin, Kolbe

Assembly Observances
O. E. Olin, Plowman, Thompson, Sturtevant

Student Elections
Simmons
Library
Sturtevant, Findley
Student Self Government
Simmons, Ayer, Zimmerli

## GENERAL INFORMATION

## FOUNDATION

1. The Municipal University of Akron was created by an ordinance of the Akron City Council, passed on August 25, 1913. This ordinance accepted in behalf of the city the offer of the Trustees of Buchtel College to give to the city the entire plant and endowment of the college as the nucleus of a municipal university, the Council promising in behalf of the city to support properly the new institution thus created. After the transfer of property had been completed by President Kolbe and Secretary Olin for the Trustees of Buchtel College, Mayor Rockwell on December 15, 1913, together with City Solicitor Taylor, accepted the deeds of transfer in behalf of the city and appointed nine citizens of Akron as members of the Board of Directors of the Municipal University of Akron.

Buchtel College, the institution thus turned over to the City of Akron, was founded in $18 \% 0$ by the Ohio Universalist Convention and took its name from its most generous benefactor, Hon. John R. Buchtel, who consecrated his life and his wealth to its support. It was chartered by the Ohio Legislature in the same year as a College of Liberal Arts and Letters and first opened its doors for the admission of students in September, 1872.

By the terms of transfer to the City of Akron provision was made that Buchtel College retain its name and identity as Buchtel College of Liberal Arts of the Municipal University.

The Municipal University of Akron, being supported in large part by public taxation, is entirely non-sectarian.

The City of Akron has, however, agreed to carry out all provisions made by donors of funds to Buchtel College. Such funds were given in most cases to establish professorships and scholarships in the College of Liberal Arts.

## AIM OF THE UNIVERSITY

As a representative of the new type of municipal institution, the University seeks to develop its units or departments not in accordance with the historical meaning of the term "University," i. e., into the four faculties of Philosophy, Law, Medicine and Theology, but rather into such schools as may train the high school graduate in various practical and technical callings. Generally speaking, the College of Liberal Arts will be used as the basis for all the units or schools of the University. The College of Liberal Arts will also continue to give the regular fouryear courses common to institutions of its kind.

## DEPARTMENTS OF THE UNIVERSITY

Buchtel College of Liberal Arts.
The College of Engineering.
The Curtis School of Home Economics.

## Buchtel College of Liberal Arts

(See page 30)
The College of Liberal Arts will endeavor to carry out the wishes of the founder of Buchtel College, namely "to secure the highest grade of Classical, Scientific and Literary Culture." Four-year courses are offered leading to the degrees of Bachelor of Arts, Bachelor of Science and (in combination with the City Normal School) Bachelor of Science in Education.

## The College of Engineering

(See page 94)
This College was opened in September, 1914, and during its first year received only the entering or first year class. Courses in various branches of engineering are being developed.

## The Curtis School of Home Economics

(See page 112)
Like the College of Engineering, the School of Home Economics was opened to students in September, 1914. A four-year course is offered leading to the degree of Bachelor of Science in Home Economics.

## The Work of Civic Co-Operation

(See page 138)
It is the intention of the Directors of the University to bring its various schools into close touch with municipal activities and to assist the work of various city departments in every possible manner by expert advice and service. Advanced students will be employed wherever possible in activities of this sort, receiving credit for work thus performed and gaining the additional advantage of a practical training in various phases of municipal affairs.

## COMBINATION COURSES

(See page 128)
To those who wish to enter the learned professions such as law or medicine, the College of Liberal Arts offers opportunities of combination with the various professional schools of the country. By means of such combination courses a student may receive both the Arts and the professional degree, at the same time shortening by one year the period otherwise necessary.
A course for the preparation of teachers has also been arranged in combination with the City (Perkins) Normal School. (See page 136.)

## EQUIPMENT

At the time of the foundation of Buchtel College in 1870 a plot of six acres of ground was purchased at the outskirts of the village of Akron on a hill overlooking the valley. The growth of the city has included this site so that now the University campus lies at the head of College Street, only a short distance from the business center of the city.
In 1899 the old main building was destroyed by fire and in 1901 Buchtel Hall was completed as the first of a modern group of college buildings. From earlier tirnes there already existed on the campus the Observatory, Crouse Gymnasium and the President's residence. Since the completion of Buchtel Hall there have been constructed the building first known as Buchtel Academy, and now used as an Engineering Building; the central heating plant; Curtis Cottage, used as the home of the School of Home Economics; the Knight Chemical Laboratory, toward the construction of which Andrew Carnegie gave $\$ 25,000$; and the Carl F. Kolbe Hall, the gift of Mr. F. A. Seiberling and Mr. F. H. Mason.

## BIERCE LIBRARY

The College Library had its origin in a collection of works donated in 1874 by the late General L. V. Bierce. During the early days of Buchtel College the Library was augmented by books purchased from the proceeds of a bequest received from General Bierce's estate. In recognition of this early gift the Library has been called the Bierce Library. It embraces about 12,000 volumes, exclusive of public documents.

## FUNDS, PRIZES AND SCHOLARSHIPS

The Katherine Claypole Loan Fund
This fund has been established by a number of women's organizations of the city and dedicated as a me-
morial to Mrs. Katherine Claypole, wife of Dr. E. W. Claypole, former Professor of Natural Science at Buchtel. Mrs. Claypole was the founder of organized women's work in Akron and always manifested a deep interest in the young people of the College.
The principal of the fund is loaned to students "who in mid-term, as often happens, find themselves without sufficient means to complete the year's-work." Applications should be addressed to Mrs. C. W. Milliken, Chairman Women's Committee, 396 East Market Street, or to Mrs. E. F. Voris, Treasurer, 7\% Fir Street.

## The Ashton Prizes

A fund consisting of $\$ 3,000$ has been established by the late Oliver C. Ashton, endowing the O. C. Ashton Prizes for excellence in reading and recitation.
The annual income of this fund will be paid, one-third to competitors from the senior class, one-third to competitors from the junior class, and one-third to competitors from the sophomore class, in a first and second prize to each class, in the proportion of two to one.
These are public exercises, and will take place at stated times during the year.

## The Senior Alumni Prize

A fund has been established by the Alumni Association for the purpose of awarding an annual cash prize of $\$ 50.00$ to that senior student in Buchtel College of Liberal Arts who has completed the regular four-year course with the highest average grade. Only students who have spent their entire course at Buchtel College are eligible.

## The Tomlinson Prizes

Thru the kindness of Rev. Irving C. Tomlinson, Class of ' 80 , of Boston, Mass., two prizes of $\$ 30.00$ and $\$ 20.00$
respectively will be offered each year to those two students of the University who present the best papers on a subject related to the work of the Municipal University. The subject is to be treated with especial reference to broadening the field and increasing the usefulness of the University, to its true character as a municipal university, and to its value, and need by the city.

## Buchtel College Scholarships

(See page 32)
A number of scholarships have been endowed by friends of the College to aid worthy and deserving students. The ship benefits will be limited to $\$ 50.00$ per year to any one student who shall be entitled to the remission of a part of the tuition charges in the College of Liberal Arts. Scholardonor of a scholarship may, at all times, designate one student, and in the distribution of these scholarships by the University, preference will be given to the immediate descendants of the donor, if the donor is deceased.

Students thus receiving scholarships may be called upon to render services to the University for any part, or all, of such aid. They will be expected to maintain their standing in scholarship, and to conduct themselves in accordance with the rules of the institution. A scholarship is granted with the expectation that the student will complete his course of study at the University of Akron, and, without a reason that shall be satisfactory to the Directors, honorable dismissal will not be granted until full tuition and all other college dues have been paid.

FREE TUITION
(Extract from The By-laws of the University Directors.)
Tuition in Buchtel College of Liberal Arts shall be free to all students whose parents are residents of Akron.

Students whose parents are not residents of Akron must prove one year's consecutive residence in Akron before they can be considered as candidates for remission of tuition charges.
Tuition can be charged in the case of all students under twenty-one years of age (whose parents do not reside in Akron) who move into the city with the express purpose of attending college, even tho such students be self-supporting.
Non-residents owening property taxed in Akron: Any person living outside of Akron but owning property within the City of Akron which is taxed, may receive credit on tuition of his child or children during any semester to the extent of taxes actually paid by him for that half-year towards the University levy, upon presenting a certificate from the County Auditor or Treasurer, stating the amount so paid.

STUDENT ORGANIZATIONS
The following student organizations have been formed in the University:
The Athletic Association; the Women's League; The Tel-Buch Association (Junior Class) ; the College Orchestra; the Buchtelite Association; The Dramatic Study Club; The Chemistry Club; The Modern Authors' Club; The Engineers' Club ; the Camera Club; The Y. W. C. A.; the class organizations.

Elections for the great majority of these are held on the same day and are controlled by a joint Board from the Faculty and the student body.

THE BUREAU OF STUDENT EMPLOYMENT
This Bureau is established for the purpose of aiding selfsupporting students in finding part-time work during the school year. Its organization is directed by the University and its services are free to all students.

## PHI SIGMA ALPHA

Phi Sigma Alpha is an honorary society, founded for the purpose of encouraging high scholarship among the Buchtel College students. Three students are chosen for membership from each senior class.

First:-That member of the senior class having the highest grades for three and one-half years.

Second:-The two members (one a man, the other a woman) having the next highest grades for three and onehalf years.

These three students are elected for membership at the beginning of the second semester of their senior year, and are given at once the privilege of wearing the fraternity's badge and colors during the remainder of their senior year. The regular initiation takes place during Commencement week of the same year.

The badge of the fraternity is of gold in the shape of an ancient coin, bearing on the obverse side a serpent, a helmet and the Greek letters Phi Sigma Alpha, and upon the reverse side ten stars, the owner's name, the year of the class and "Buchtel College."

The colors of the fraternity are green and silver.

## ATHLETICS

All participation in intercollegiate athletics is under the direct supervision of the Faculty and the Department of Physical Training. All teams representing the University are governed by the rules of the Ohio Conference.

## ADMISSION

Each candidate for admission must have had at least a full high school preparation, or college preparatory course, amounting to 15 units and embracing the specific subjects named for college entrance.

No student will be admitted to the freshman class who has an entrance deficiency of more than one unit, or the equivalent of a year's work in one study, and no student from the Akron High Schools will be admitted with less than 16 units without the recommendation of the Superintendent of Schools.

Students coming from other institutions of collegiate rank must furnish certificates of honorable dismissal.

Admission is by examination or on certificate.
In place of entrance examinations the following certificate plans will be accepted:
I. The certificate of principals of approved high schools and academies will admit students to the freshman class on probation, and such statement must be a certification of the specific subjects in which the candidate has passed satisfactory examinations covering the requirements as stated for college entrance. Such certificate must be filed with the Committee on Classification by the candidate on application for entrance. Blank forms for the record of such work will be furnished on application to the President or Secretary of the University.
II. The pass-cards, certificates and academic diploma of the State Board of Regents of New York State for the subjects which they cover will be accepted for college entrance on probation. Such credentials will not, however, be accepted for advanced standing.

Any freshman failing to receive unconditional credit for at least eight term hours at the end of the first semester or of the second semester shall be dropped from the institution, and shall be allowed to re-enter only after passing the entrance examinations as specified by the Faculty.

SPECIAL STUDENTS
Students over 21 years of age who have not fulfilled the entrance requirements may be admitted as special
students, not in candidacy for a degree, to such courses as they are prepared to enter.

## ADVANCED STANDING

Students may be admitted to advanced standing on presentation of a certificate of work from an institution of recognized standing, together with a certificate of honorable dismissal.

Applicants for advanced credit, who do not present satisfactory grades from other colleges, will be examined in the courses in question and receive full credit on the successful passing of such examinations.

Students presenting high school credits in a modern language or in mechanical drawing above and beyond the entrance requirements for college will be allowed college credit at the rate of fifty per cent. in term hours for high school work, provided that it results in a full credit in term hours and also provided that the student shows the ability to carry advanced work.

## REGISTRATION

The registration days for the beginning of the school year 1916-1917 will be Sept. 18 and 19 ; for the second semester, January 19 and 22.

All students, both old and new, are required to register and classify for work on these days between the hours of 8:30 A. M. and 5:00 P. M.

Candidates for admission to the freshman class are required to submit a certificate giving details of their high school work as early as possible during the summer preceding entrance to the University. Such certificate should be addressed to the Chairman of the Classification Committee.

Procedure for registration and classification

1. Fill out registration card.
2. a. If a new student, present yourself to the Committee on Entrance; then see the Classification Committee of the school to be entered.
b. If not a new student, take registration card to the Classification Committee of the school to be entered.
3. Take Classification slip to the Secretary's office, where term bills should be paid.

## GENERAL REGULATIONS

The Term-Hour-The unit of instruction is one hour per week for one semester. From two to three hours of laboratory work shall be considered as equivalent to one recitation hour with preparation therefor. This unit is known as a "term hour."

Required for degree- 128 term hours, except in the College of Engineering.

Freshman Failure-Any freshman failing to receive unconditional credit for at least eight term hours at the end of the first semester or of the second semester shall be dropped from the institution, and shall be allowed to reenter only after passing the entrance examinations as specified by the Faculty.

Election of Subjects in other Schools of the UniversityNo student in one school or college shall be allowed to elect subjects in other schools until all freshman and entrance requirements are satisfied.

Curtis School of Home Economics-Students in Buchtel College may elect a maximum of twelve hours' work in the Curtis School to be applied toward the requirements for graduation from Buchtel College.

College of Engineering-Students in the scientific course in Buchtel College may elect the following subjects in the College of Engineering to be applied toward the requirements for graduation from Buchtel College:

| Mechanical Drawing | 4 hours |  |
| :---: | :---: | :---: |
| Descriptive Geometry | 4 |  |
| *Surveying | 4 |  |
| Strength of Materials | 3 |  |
| Applied Mechanics | 3 |  |
| *Dynamos and Motors | 3 | " |
| *Hydraulics | 3 |  |

*Given during 1916-17 in Buchtel College. Surveying will count two hours.

Work thus elected must not interfere with required major and minor studies in the College of Liberal Arts, nor can it be substituted for them.

## FEES

Resident Students-All students who are residents of the City of Akron according to the rules adopted by the Board of Directors (see "Free Tuition" page 20), or whose parents are residents of Akron, are entitled to free tuition at the University. They are, however, required to pay an incidental fee of $\$ 10.00$ per semester, covering registration, incidentals and student activity fee. If not paid before September 25 of the first semester, or February 12 of the second semester, the fee is $\$ 12.50$ per semester. Fees to cover breakage and materials are also charged to all students in laboratory courses (See pages 48, 99, 114).

Non-resident Students-The tuition for non-resident students is $\$ 40.00$ per semester in the College of Liberal Arts and the School of Home Economics, in addition to the inci-
dental fee of $\$ 10.00$ per semester. The tuition for co-operative students in engineering is $\$ 30.00$ per semester plus the regular incidental fee of $\$ 10.00$ per semester. Fees to cover breakage and materials are also charged to all students in laboratory courses. If not paid before September 25 of the first semester or February 12 of the second semester the tuition fee is $\$ 35.00$ in the Engineering College and $\$ 45.00$ in other departments and the incidental fee is $\$ 12.50$.

Summary of Fees-The following table gives a summary of all fees for resident and non-resident students (except laboratory fees), also for students electing eight hours or less:

## Tuition Fee-

For residents of Akron: free.
For non-residents per semester.

|  | If paid before Sept. 25 Feb. 12 | If paid between Sept 25 and <br> Nov. 12 or April 1 |
| :---: | :---: | :---: |
| More than 8 hours per week. | \$40.00 | \$45.00 |
| From 5 to 8 hours per week. | 25.00 | 27.50 |
| 3 or 4 hours per week. | 15.00 | 17.50 |
| 1 or 2 hours per week | . 8.00 |  |

## Incidental Fee-

Payable by resident and non-resident students.

|  |  | If paid be25 and |
| :---: | :---: | :---: |
|  | If paid before | Nov. 1 or <br> Feb. 12 an |
|  | Feb. 12 | April 1 |
| More than 8 hours per week. | \$10.00 | \$12.50 |
| From 5 to 8 hours per week. | 8.00 | 10.00 |
| 3 or 4 hours per week | 5.00 | 6.50 |
| 1 or 2 hours per week | 3.00 |  |

Students whose entire fees are not paid by Nov. 1 for the first semester or by April 1 for the second semester will be suspended from further participation in class work until such fees are paid.

Non-resident students, already registered during the school year 1913-1914, will, by special act of the Board of Directors, be allowed to finish their courses on the basis of the rate of tuition charged in that year.

## EXPENSES FOR LIVING

Ngn-resident students at the University of Akron can obtain a good room for $\$ 1.50$ to $\$ 2.50$ per week. The common price for a single room, occupied by one person, is $\$ 2.00$ per week; for a double room, occupied by two persons, $\$ 1.50$ per person. The University maintains no dormitories, but lists of rooms for men may be found at the general office. All women attending the University are under direct charge of the Dean of Women. No non-resident woman is allowed to select a rooming place not on the approved list of the Dean of Women. Non-resident women intending to enter the University should write beforehand to Mrs. E. A. Thompson, Dean of Women, who will gladly assist them in obtaining suitable living quarters.

Board may be secured in private families (often in connection with room), in boarding houses near by or at the Y. M. C. A. and Y. W. C. A. A number of restaurants also offer rates by the week. The usual price is from four dollars to five dollars per week.

The School of Home Economics serves a cafeteria luncheon in Curtis Cottage every noon during the school year.

SELF HELP
A large proportion of the men of the institution are self supporting. Akron offers a great variety of work for men students, such as clerking, soliciting, waiting on table, play-
ing in orchestras, etc. The University maintains a Bureau of Student Employment which helps new students in getting work for odd hours, evenings and on Saturdays. The demand for such student aid on the part of Akron citizens is usually larger than the University can supply.

No student, however, should enter without sufficient money for payment of term bills and for living expenses for several months, since too much outside work often seriously hampers the beginning of a college course.

The opportunity for women in the matter of self help is more limited. It consists largely of work during certain hours of the day in private families in return for board and room, clerking and, to a limited extent, work in offices or libraries.

The University offers a number of student assistantships in various departments to upper classmen. Such positions pay, usually, $\$ 100$ per year. All inquiries regarding self help for men should be addressed to the Bureau of Student Aid; for women, to the Dean of Women.

## BUCHTEL COLLEGE OF LIBERAL ARTS

Buchtel College was founded as a College of Liberal Arts in 1870 by the Ohio Universalist Convention in co-operation with the Hon. John R. Buchtel. It became a part of the Municipal University of Akron on December 15, 1913. The following is a list of the original incorporators of Buchtel College :
*J. S. Cantwell, D. D.
*Col. Geo. T. Perkins.
*Henry Blandy.
*Rev. Geo. Messenger.
Rev. B. F. Eaton.
*Judge Newell D. Tibbals.
*Rev. J. W. Henley, D. D.
*Judge E. P. Green.
*O. F. Haymaker.
*John R. Buchtel.
*Rev. H. F. Miller.
Rev. E. L. Rexford, D. D.
Rev. H. L. Canfield, D. D.
*Willard Spaulding.
*George Steese.

PRESIDENTS OF BUCHTEL COLLEGE
S. H. McCollester, D. D., Litt. D. . . . . . . . . . . . 1872-1878
E. L. Rexford, D. D. . . . . . . . . . . . . . . . . . . . . . . . 1878-1880
*Orello Cone, D. D................. . . . . . . . . . . . . 1880-1896
C. M. Knight, Sc. D. (ad interim) . . . . . . . . . . . 1896-1897
I. A. Priest, D. D. . . . . . . . . . . . . . . . . . . . . . . . . . 1897-1901
*A. B. Сhurch, D. D., LL. D. . . . . . . . . . . . . . . . . . 1901-1912
P. R. Kolbe, Ph. D. . . . . . . . . . . . . . . . . . . . . . . . . 1913-
*Deceased.

## ENDOWMENTS

## MESSENGER PROFESSORSHIP

The Messenger Professorship of Mental and Moral Philosophy was endowed by Mrs. Lydia A. E. Messenger, late of Akron, in memory of her deceased husband, Rev. George Messenger.

## HILTON PROFESSORSHIP

The Hilton Professorship of Modern Languages was endowed by John H. Hilton, late of Akron.

> PIERCE PROFESSORSHIP

The Pierce Professorship of English Literature was endowed by Mrs. Chloe Pierce, late of Sharpsville, Pa.

BUCHTEL PROFESSORSHIP
The Buchtel Professorship of Physics and Chemistry was samed in honor of Mrs. Elizabeth Buchtel, late of Akron.

AINSWORTH PROFESSORSHIP
The Ainsworth Professorship of Mathematics and Astronomy was endowed by Henry Ainsworth, late of Lodi.

RYDER PROFESSORSHIP
The Ryder professorship of Rhetoric and Oratory was established by the Board of Trustees in memory of Dr. William H. Ryder, late of Chicago.

## MESSENGER FUND

The Messenger Fund was created by Mrs. Lydia A. E. Messenger, late of Akron. The fund consists of $\$ 30,000$.

ISAAC AND LOVINA KELLY FUND
The Isaac and Lovina Kelly Fund was created by Isaac Kelly, late of Mill Village, Pa. This fund consists of $\$ 35,788$.

WILLIAM PITT CURTIS FUND
This fund was established by William Pitt Curtis, late of Wadsworth, O. It now amounts to $\$ 25,000$.

CROSLEY LIBRARY FUND
Rev. Lotta D. Crosley has established this fund with a gift of $\$ 3,000$.

## PERPETUAL SCHOLARSHIPS IN BUCHTEL COLLEGE

The following named persons have established perpetual scholarships in Buchtel College:
 *James Pierce ............................ Sharpsville, Pa. *Elijah Drury . .......................................... *Mrs. Mary C. Martin .......................... Lebanon *James F. Davidson ............................... Brimfield * $\dagger$ Miss Betsey Thomas ............................................ *John Perdue ................................ Lafayette, Ind. *Eli M. Kennedy......................... . Higginsville, Mo.

*N. S. Olin . ........................................ . Ravenna *Јонк B. Smitн ....................................... Urbana *Mrs. Candia Palmer ........................ . . Painesville *Mrs. Geo. W. Steele . . . . . . . . . . . . . . . . . . . . . Painesville
*George W. Steele ........................... . . Painesville
*Mrs. Betsey Dodge ........................McConnellsville

*Joseph Hidy, Sr. .............................. Jeffersonville
*Mrs. Henry Boszar ..............................Brimfield
*Henry Boszar (3) ...............................Brimfield
*H. D. Loudenback. . . . . . . . . . . . . . . . . . . . . . . . Westville

*Isaac and Lovina Kelly .................. Mill Village, Pa.
*S. T. and S. A. Moon. . . . . . . . . . . . . . . . . . . . . . . . . . Cuba
*George Thomas .........................................enwich
*Mrs. E. W. Terrill. ......................... . Jeffersonville
*Mrs. John H. Hilton . . . . . . . . . . . . . . . . . . . . . . . . Akron
*Samuel Birdsell .......................................eru
*Samuel Grandin ...............................idioute, Pa.
*N. B. and A. E. Johnson . . . . . . . . . . . . . . . . . . . . . Mingo
*Henry Ainsworth (10) .................................. Lodi
Mr. and Mrs. John Miller ..................... Edgerton
*John P. Chapin ................................. Philadelphia
*Chistian Swank ...................................Creston
*Mrs. S. O. Асомв .................................


* $\ddagger$ Miss Hannah Allyn .....................................................
*Mrs. Rosa G. Wakefield ..................................een
*Martha A. Bortle ............................... Hamilton

These scholarships are intended to aid worthy and deserving students, and are awärded by a Scholarship Committee under authority from the Board of Directors.
*Deceased.
$\dagger$ In honor of her father, Eliphas Burnham.
$\ddagger$ In memory of her father and mother, Mr. and Mrs. Israel Allyn, and her sister, Lucy Allyn.
$\ddagger \ddagger$ In memory of her father, Oliver Rice Loring.


## ENTRANCE REQUIREMENTS

Unconditional requirements (all courses): 15 units.
No student will be admitted to the University who has an entrance deficiency of more than one unit, and no student from the Akron High Schools will be admitted on less than 16 units without the recommendation of the Superintendent of Schools.

A unit is a full year's work in a subject with recitation periods of one hour held four times a week, or 45 minutes held five times a week.

Of the foreign language offered, at least two units must be in one language. Not less than a full unit in the beginning of any language will be accepted.

## A. B. COURSE

The candidate must present :
English ( page 36) ................................... 3 units Mathematics (page 36) ............................ $21 / 2$ units *Foreign Languages (page 38)................... 4 units General History (page 43)........................ 1 unit Elective (from the subjects on pages 34 and 35 ). . $41 / 2$ units

## B. S. COURSE

The candidate must present:
English (page 36) ........................................ 3 units Mathematics (page 36) . . . . . . . . . . . . . . . . . . . . . . 3 units Foreign Languages (page 38) . . . . . . . . . . . . . . . . . 4 units Sciences (page 41) [one unit must be Chemistry
or Physics] . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2 units Elective (from the subjects on pages 34 and 35 ).. 3 units

## ELECTIVE SUBJECTS

The elective work for admission to any of the three courses may be made from the following subjects or their equivalents, details of which will be found on the pages referred to:-

Astronomy (page 38) . . . . . . . . . . . . . . . . . . . . . . . . . $1 / 2$ unit
Botany (page 42) ............................ . . . . 1 or $1 / 2$ unit Chemistry (page 41) .............................. . . . 1 unit Civics (page 43) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $1 / 2$ unit
*For a major in Latin, or in Greek and Latin (see page 45 ), four years of Latin are required for entrance.

Physics (page 41) ..... 1 unit
Physical Geography (page 42 ) ..... 1 or $1 / 2$ unit
Physiology (page 42) ..... $1 / 2$ unit
Zoology (page 42) ..... 1 or $1 / 2$ unit
Language Not more than 6 units
Domestic Science.
Manual Training ..... 1 unit
$\left.\begin{array}{l}\text { Commercial Law......... } \\ \text { Commercial Geography. }\end{array}\right\}$ 1 unit

Graduates of manual training courses in high schools are allowed a maximum of two units in manual training and mechanical drawing toward entrance to the scientific course.

## ENTRANCE AT MID-YEAR

Students graduating from high schools at midyear with two or more years of German or four years of Latin may elect from the following subjects if they desire to enter at once :

Latin 26 ( 4 h .)
German 104 (3h.)
Eurricut Exeveto
$\times$ German 132 (th.)
Federal Govt. 262 (2 h.)
English 65 ( 3 h .)
At the beginning of the following fall the student will be assigned to the regular freshman work of one of the three courses and can pursue his studies without irregularity.

## DESCRIPTION OF ENTRANCE UNITS

Following is a detailed statement of the requirements in each of the various subjects that may be offered for admission to college:

## ENGLISH, 3 Units

The requirements include the College Entrance Requirements in English, practically uniform thruout the United States.

Three years, with five recitations a week, should be given to preparation, the work in Rhetoric and Composition being done simultaneously with the reading and study of the required English and American classics.

The applicant should bring a written statement from the principal or superintendent of the school attended, stating definitely the books read, and the amount of time given (1) to Rhetoric and Composition and (2) to the reading and study of the required classics.

The leading requirement, however, is the ability of the student to express his ideas in his mother tongue, clearly, forcefully, and accurately. Lacking this, his preparation to enter college is very inadequate, no matter how many books he may have read, or how much time he may have given to English in the grammar school and the high school.

## MATHEMATICS AND ASTRONOMY

Algebra and Plane Geometry are required for entrance to all courses. Solid Geometry is required for entrance to the scientific course. Astronomy may be offered as one of the electives in any course, but it is required in none.

## Algebra, I I/2 Units

The work in Algebra should include the following subjects: fundamental operations, factors, multiples, fractions, simple equations, methods of elimination, problems, interpretation of solutions, involution, evolution, surds, exponents, complex numbers, quadratic equations, theory of quadratic equations, simultaneous quadratics, binomial theorem for positive integral exponents, ratio, proportion, variation, series and logarithms.

It is suggested that the time spent in preparing to meet this requirement be five 55 -minute periods per week for a year and a half. It is further suggested that the work of the last half-year be done late in the preparatory school course in order that there may be close and ready articulation with the required mathematics of the freshman year in college. It is especially desirable that the student come to his college work with habits of neatness and accuracy well formed, and that he have some sense of mastery over so much of mathematics as he may have studied.
Geometry, I I/2 Units

Plane and Solid Geometry. The set propositions required are those found in the older text books. Among the topics required may be mentioned: Plane rectilinear figures; the circle and the measure of angles; similar polygons; areas, regular polygons; the measure of the circle, the relation of lines and planes in space; the properties and measure of prisms, pyramids, cylinders, and cones; the sphere, and the spherical triangle.

From the demonstration of many original propositions and the solution of many original problems, the student should have gained a fair degree of confidence in his own ability to build up a geometrical proof. Accuracy of statement and elegance of form are to be emphasized.

It is suggested that the time spent in preparing in Geometry be one and one-half school years, and that the work of the last half-year come in the third or fourth year of the preparatory course.

> Astronomy, I/2 Unit

A thoro knowledge of the fundamental facts and principles of Astronomy is required. Familiarity with so much of the science as is contained in Young's Elements of Astronomy will suffice.

$$
\begin{aligned}
& \text { FOREIGN LANGUAGES } \\
& \text { Latin. I, 2, } 3 \text { or } 4 \text { Units }
\end{aligned}
$$

Four units of at least four recitations a week are required for entrance to Major I or II of the A. B. Course (see page 45). One, two, three, or four units may be offered for entrance to any other major of either the A. B. or B. S. course, subject to the requirement that at least two units must be offered in some one foreign language.
First Year. (One Unit.) Collar and Daniell's First Latin Book, or Bennett's Latin Lessons, with twenty-five pages of Viri Romae or an equivalent.
Second Year. (One Unit.) Cæsar's De Bello Gallico, Books I-IV, or an equivalent, with thirty lessons in Prose Composition.
Third Year. (One Unit.) Cicero's Orations: Four against Catiline, Poet Archias, the Manilian Law, Verres and Roscius. For the last two an equivalent may be offered. Thirty lessons in Latin Prose Composition based upon Cicero.
Fourth Year. (One Unit). Virgil's Eneid, Books I-VI.
Grammar, including Prosody (New Allen and Greenough, Bennett, or Harkness).

$$
\text { Greek, } 1 \text { or } 2 \text { Units }
$$

One or two years of Greek may be offered for entrance.
First Year. Beginners' Lessons in Greek.
Second Year. Xenophon's Anabasis.

$$
\text { German, 1, 2, } 3 \text { or } 4 \text { Units }
$$

One, two, three or four years of German may be offered for admission to either the A. B. or the B. S. Course, except in the case of Majors I and II (see page 45). Candidates must present from former teachers a full statement of work covered, texts used, and time spent. No student will be allowed to enter an advanced course without examination.

The following work should be offered for one, two, three or four years' credit, respectively:

One Year. Joynes-Meissner's Grammar (Part I.) Fair equivalents in standard beginners' books will be accepted as substitutes. One hundred and fifty pages of simple German, in which should be embraced some of the best known songs and ballads and at least one longer story, such as Immensee, Germelshausen, or Hoeher als die Kirche. The candidate should be able to pronounce German correctly, to understand and form simple sentences, and to write German script.

Two Years. In addition to the requirements for the first year, the candidate should by review have accurately familiarized himself with the principles of grammar, and should be able to translate with readiness easy connected English prose into German.

He should be able to write German from dictation, and should have read at least one of the easier classics besides two hundred pages of easy prose.

Three Years. In addition to the requirements for the first two years, the candidate should have read at least two more classic dramas, and at least one hundred pages of
more difficult prose, such as Die Harzreise or selections from Dichtung and Wahrheit, and should be able to discuss these freely in the German language. He should show the results of an additional year's drill in translating more difficult English prose into German either by writing or orally, and should have had instruction in the literary history of Germany in the later Classic and Modern Period.

Four Years. • The work of this year should be a continuation on the groundwork of the first three years, and should include at least eight hundred pages of reading, altho a less number may be presented if more difficult works have been attempted. In addition the candidate should have a knowledge of the history of German literature from the earliest periods, and should know something of Germany and modern German life.

It is advised that some subjects of. general practical interest such as German schools, stores, meals and amusements be treated.

$$
\text { French, I, 2, } 3 \text { or } 4 \text { Units }
$$

One, two, three or four years of French may be offered for admission to either the A. B. or the B. S. Course, except in the case of Majors I and II (see page 45). Candidates must present from former teachers a full statement of work covered, texts used, and time spent. No student will be allowed to enter a higher course than French 154 without examination or personal conference with the instructor in charge of the French Department.

The following work should be offered for one, two, three or four years' credit, respectively :

One Year. A thoro knowledge of the leading principles of French grammar as set forth, for instance, in Fraser and Squair; an accurate acquaintance with the more common irregular verbs; the ability to translate easy English prose
into French and to read easy French at sight; the ability to pronounce French, and the careful reading of two hundred pages of less difficult French.

Two Years. In addition to the above, the candidate should know accurately all irregular verbs in common use, and should be able to read a page of French with accurate pronunciation. He should have read at least four hundred pages of various authors, which should include one or two classic dramas. He should have had some practice in writing from dictation, and should be able to translate ordinary English prose into French.

Three Years. The work of the third year should comprise the reading of approximately five hundred pages of French of ordinary difficulty; memorizing of passages of matter read, either prose or poetry; writing from dictation; review of grammar.

Four Years. The work of the fourth year should include the reading of at least eight hundred pages of standard French, classical and modern; the writing of numerous short themes in French; a knowledge of the principal authors and works of French literature and of the important periods in French history; an ability to discuss in French the works read.

SCIENCES
Physics, I Unit.
Recitations at least four times per week for a school year, together with a note-book, containing the description and results of at least fifty experiments, neatly recorded.

## Chemistry, i Unit

Recitations three times a week for a school year, togetner with laboratory practice for two hours per week and
a note-book containing an account of all experiments made by the student's own hands, with sketches of the apparatus used.

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Zoology, I/2 or I Unit
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To count for one unit, the course should extend thruout a year of 36 weeks, five times per week, reciting at least 45 minutes. One-fourth should be laboratory work in dissections and drawings. Drawings and notes should be presented to show the nature of the work done. Davenport or any good elementary text.

Botany, I/2 or I Unit
If offered for one unit, it should consist of thirty-six weeks of work, five times per week, at least one-fourth of which should be of the nature of field or experimental work and dissections. Coulter, or Bergen and Caldwell, is recommended as a text-book. Note-book required.

> Physiology, I/z Unit

Only work done above the grades will count for entrance. It should consist of eighteen weeks' work, five times per week, of at least 45 -minute periods each. Not less than about twenty hours of laboratory work, of dissections, drawings, and experiments should be offered. Martin's Human Body (briefer course) revised by Fitz is recommended as a good text.

## Physical Geography or Physiography, I/z or I Unit

Five times per week for one-half year. A good textbook, such as Davis' Physical Geography, should be supplemented by field excursions and laboratory, to cover about one-fourth of the time. Note-book required.

NOTE:-In all science subjects at least two periods of laboratory or experimental work should count as the equivalent of one recitation.

HISTORY AND CIVICS
Advanced U.S. History, i/2 or I Unit
One year's work with any approved high school text book.

$$
\text { General History, I or } 2 \text { Units }
$$

The equivalent of one or two years' work in Ancient and Modern History, using any approved high school or academy text.

English History, $1 / 2$ or I Unit
One year's work in high school or academy, using any standard text.
Civics, I/2 Unit

One half-year's work in Civil Government. Only high school or academy work accepted.

## COURSES OF STUDY AND DEGREES

Two courses of study, each requiring 128 term hours for graduation, and leading respectively to the degrees A. B. and B. S., are offered in Buchtel College.* (For terms of admission to these courses see page 33ff.)

The studies of the freshman year are definitely assigned and required in each course.

## FRESHMAN STUDIES (required)

I. The A. B. Course

| First Half-Year | Term Hrs. | Second Half-year Term Hrs. |
| :---: | :---: | :---: |
| Rhetoric 51 |  | Rhetoric 52 .............. 3 |
| *Chemistry 353, |  | *Chemistry 354, or |
| Chemistry 351, | 4 | Chemistry 352, or...... $\} 4$ |
| Biology 401 |  | Biology 402 |

The above-mentioned subjects are required of all students in the A. B. course. Additional freshman studies in A. B. course leading toward Majors I and II (see page 45) are:

| Greek 1 | 4 | Greek 2 |
| :---: | :---: | :---: |
| Latin 25 | 4 | Latin 26 |

*Students who have not had a year of Chemistry in high school are required to take Chemistry 353 and 354. Students who have had a year of Chemistry in high school will take Chemistry 351 and 352 , or Biology 401 and 402 .

Additional freshman studies in A. B. Course leading toward Majors III-VII (see page 46) are:

Foreign Language..... 4 $^{\text {• }}$ Foreign Language ....... \&
 * For combination courses and training course for teachers see \#For combination courses and training course for teachers see pp. 128 ff.

## II. The Scientific Course

First Half-Year Term Hrs Second Half-year Term Hrs.
Rhetoric $51 \ldots . . . . .$. .... 3 Rhetoric $52 \ldots . . . . . .$. ...... 3
*Chemistry 353, or........ . Chemistry 354, or......
Chemistry 351, or...... $\}^{4} \quad$ Chemistry 352, or...... $\} 4$
Biology 401................ Biology $402 . . . . . . . . .$.
Hygiene ................ 1 Current Events .......... 1
Mathematics 301 ........ 4 Mathematics 302 ........ 4
German or French ...... 4 German or French ...... 4
*Students who have not had a year of Chemistry in high school are required to take Chemistry 353 and 354: Students who have had a year of Chemistry in high school will take Chemistry 351 and 352 , or Biology 401 and 402.

## MAJORS AND MINORS

At the end of the freshman year the student is asked to indicate to the Committee on Classification whatever line of work he may wish to pursue. This subject is then known as the "major." Each major brings with it a number of required "minor" subjects. All major and minor work must be beyond the stildent's freshman requirements. Twenty-four term hours above the freshman year is the minimum requirement for a major, a term hour being a study carried one hour per week through one semester. All work beyond the freshman year and outside of the major and minor requirements is elective, 16 hours per semester being counted as regular work.

## I. MAIORS LEADING TO THE A. B. DEGREE

For list of Minors, see page 46.
(Unless otherwise specified, the work required for the major is twenty-four hours above the freshman year.)
I. Greek and Latin (with minors 1-6 inclusive). At least twelve hours must be in the Greek language above the freshman year.
II. Latin (with minors 1 to 6 inclusive).
III. German (with minors 1 to 5 inclusive, and 7).
IV. Romance Languages (with minors 1 to 5 inclusive, and 8 ).
V. Philosophy and Economics (with minors 1 ta 4 inclusive, ${ }^{7}$ and 8). Twelve hours each.
VI. History (with minors 1 to 3 inclusive, 5,7 and 8 ).
VII. English Literature (with minors 3, 5, 7, 8, 9, and English History).
II. MAJORS LEADING TO THE B. S. DEGREE
(Unless otherwise specified, the work required for the major is twenty-four hours above the freshman year.)
VIII. Chemistry (with minors $1,2,4,5,10,12,13$ ).
IX. Mathematics and Physics (with Minors 1, 2, 4, 5, 10, 11, 13). Includes Calculus, 10 hours; Surveying, 2 hours; Physics, 12 hours.
X. Biology (with minors 1, 2, 4, 5 [Psychology], 11, 12,13 ).
III. MINORS

Term hrs.
-1. Rhetoric 53 ...................................... 2 .

- 2. Literature 65 (or 75 and 76 ) ............... . 3 or 4
- 3. *Science (other than that taken in freshman year) ............................................. 8 •
- 4. History . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 6 -

5. "Philosophy, Logic, Economics, Political Sci- . ence ............................................... 6
6. Modern Language . . . . . . . . . . . . . . . . . . . . . . . . 6 or 8
7. French ........................................... . 6 or 8
8. Germart . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 6 ór 8
9. Classical Masterpieces 9 and $10 \ldots \ldots . .$. ......... 6
10. Biology . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 8 •
11. Chemistry ...................................... . . . 6 or 8 -

12. Scientific Germant . . . . . . . . . . . . . . . . . . . . . . 4
*Only courses which include laboratory work.

## Thesis

A thesis showing original research by the student may be presented for graduation. It shall be taken in the subject chosen as the student's major, and shall count for two term hours if carried satisfactorily beyond the regular class-room work. The thesis must be handed to the instructor in charge on or before the beginning of the senior vacation.

## Master's Degree

The degree of A. M. may be conferred upon those who have acquired the degree of A. B., and the degree of M. S. upon those who have acquired the degree of B. S. These degrees may be granted in not less than two years after graduation, unless the applicant, in residence, can devote his entire time to the work, when the degrees may be granted in one year. At least one year of residence is required of all candidates for a Master's degree.

The candidate must accomplish the equivalent of a full college year's work of thirty-two term hours, choosing his subjects as majors and minors, twenty-four of which must be in the major field.

In the minor the work may be partly unduplicated undergraduate, but the applicant will be expected to carry it beyond the lines of usual college work. In the major, the work must be confined to graduate subjects and methods, and in this a satisfactory thesis must be presented which will give evidence of original work in the investigation of
some new field rather than of a mere re-statement of what is already known. The subjects and methods must have received the sanction of the instructors in the departments chosen.

An examination will be required in both subjects.
A candidate for either of these degrees at any given commencement must present his thesis and report for examination not later than June 1st.

## FEES

For general statement see page 26. The following laboratory fees are charged for courses in the College of Liberal Arts. By action of the Directors these laboratory fees are collectable strictly in advance and are a necessary prerequisite to enrollment in classes.
Chemistry 351, 352, 353, 354, per semester. . . . . . $\$ 3.00$
" All other courses . . . . . . . . . . . . . . . . . . . . 4.00
" Deposit for breakage in all courses, per semester .................................. 5.00

The unused portion of this breakage deposit will be returned at the end of each semester.

Physics 343 and 344 each . . . . . . . . . . . . . . . . . . . . . . 2.50
Biology courses 401-410 inclusive, each. . . . . . . . . . 2.50
Surveying ............................................... 2.00
Graduation fee-Payable one week before graduation . . . . . . . . . . . . . . . . . . . . . . 5.00
Master's degree-Payable one week before graduation ............................ . . 10.00
Students who have not met all term bills by November 1 for the first semester, or April 1 for the second semester, may be suspended from classes until payment is made.

## DEPARTMENTS OF INSTRUCTION

The general system of numbering and arrangement is according to the following groups:

Subject
Course Numbers
Ancient Languages .................................... $1-50$
English . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 51-100
German . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 101-150

Romance Languages . . . . . . . . . . . . . . . . . . . . . . . . . . 151-200
Mental and Moral Philosophy. . . . . . . . . . . . . . . . . 201-250
Economics, Political Science, History . . . . . . . . . . 251-300
Mathematics . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 301-350
Chemistry . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 351-400
Biology . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 401-450
Physical Training ......................................

GREEK
PROFESSOR ROCKWELL.
MR. TULLER.
Major: Of the twenty-four hours necessary for a major in Greek and Latin, twelve hours at least must be of the Greek language above the freshman year.

1. Goodwin's Greek Grammar and Xenophon's Anabasis(First Semester.) M., W., F., S., 7:30.
2. Xenophon (Anabasis, 3 books).-(Second Semester.) M., W., F., S., $7: 30$.
3. Greek Masterpieces thru English Translations.-(First Semester.)
M., W., Th., $9: 20$.

Advanced courses in Greek will be arranged for those wishing to continue the subject. The great masterpieces of prose and poetry will be studied in their proper historical and literary setting.

A careful study will be made of the various forms of Greek Literature and the chief works in the field of lyric and epic poetry, the drama, history and philosophy.
10. Latin Masterpieces thru English Translations.-(Second Semester.)
M., W., Th., $9: 20$.

The continuation of the preceding course.
CLASSICAL ARCHEOLOGY.
PROFESSOR ROCKWELL.
These courses are open to all students above the freshman year. Courses 17 and 18 will count toward either major offered in this department.
17. History of Greek Sculpture.-(First Semester.)

Tu., Th., $7: 30$. Not given 1916-191\%.

This has been planned as a general course and will not require work in Greek or Latin. It will consist largely of lectures. There will be a short introduction setting forth the relation of Greek Art to the Art of Egypt, Assyria and Phenicia, and this will be followed by a discussion of the various periods and schools of Greek Sculpture and the more important artists. The subject will be illustrated by photographs and lantern-slides. Richardson's Greek Sculpture will be made the basis of the Course, and some collateral reading in histories of art will be required. The ability to read German, tho not absolutely necessary, will be decidedly advantageous. Note-books of the students will be examined by the instructor from time to time.
18. (Second Semester.)

Tu., Th., $7: 30$. Continuation of Course 17. Not given 1916-191\%.
20. General Course in Classical Archeology.-(Second Semester.)
Tu., Th., 7:30.

## LATIN

## PROFESSOR ROCKWELL.

Four units in Latin are required of all students entering freshman Latin.

The elective courses are $27,28,29,30,33$ to 36,39 to 41 .
Major: Twenty-four hours elected above freshman year constitute a major in Latin.

The following arrangement of courses is suggested:
Sophomore year: Latin 27 and 28 (six hours).
Junior year: Latin 31 and 32 (six hours), and one lecture course, 37 and 38 (four hours).

Senior year: Latin 29 and 30 (six hours), and one lecture course, 35 and 36 (four hours).

## ENGLISH

dean spanton.
ASSISTANT-PROFESSOR STURTEVANT.
MR. BRICKLEY.
RHETORIC
ASSISTANT-PROFESSOR STURTEVANT.
Mr. BRICKLEY.
51. Freshman Rhetoric.-(First Semester.)

Sections a and b, M., W., Th., $9: 20$; Sections c and d, M., W., F., $10: 15$.

Required of all freshmen. A thoro review of the principles of style. Two themes each week. Monthly reading of short stories. Frequent conferences with instructors in regard to work in composition.
52. Freshman Rhetoric.-(Second Semester.)

Sections a and b, M., W., Th., 9:20; c and d, M., W., F., $10: 15$.

Required of all freshmen. Weekly themes. Conference work continued. Reading of selected novels and modern plays.
53. Argumentation.-(First Semester.)

Tu., Th., $11: 10$.
Required of all sophomores. The class is organized as an Assembly with the instructor as chairman. Study and practice of rules of order ; the writing of minutes. Study of manual of debate. Weekly debates upon practical questions submitted by the members of the class. Text-book: Cushing's Manual of Parliamentary Practice (Revised edition).
54. Argumentation.-(Second Semester.)

Required of all sophomores. Continuation of Course 53. Study of correct form for resolutions and reports. The drafting of a Constitution and By-laws. Careful study of the principles of argumentation. Weekly debates as in the first semester.
55. Advanced Composition.-(First Semester.)
(Two term hours.) Time to be arranged when class meets.
Prerequisite: Courses $51,52,53,54$. Close study of the expository and descriptive essay. Wide reading in illustrative work of the best modern writers. A large amount of composition is required.

Not given 1916-1917.
56. Advanced Composition.-(Second Semester.)

A continuation of Course 55. Study of the short-story with wide illustrative reading. Text-book: Pitkin's ShortStory Writing.

Not given 1916-191\%.
59. News Writing.-(First Semester.)
F., 10:15. (Two term hours.)

Recitation and practice work. A practical course in the characteristics of news style, in the writing of the lead, and in the most effective arrangement of material within the "story." As far as time permits, the student will do actual reporting on a "beat" assigned to him.

## 60. News Writing.-(Second Semester.)

Continuation of 59.
Writing of heads, special articles, reviews, and editorial articles. Practice work as in course 59, and in the effective arrangement of the news stories upon the printed page.

The purpose of Courses 59 and 60 is not to make the studenta finished reporter, but to give him an appreciation of the demands of the profession of journalism, and to prepare him best to meet them.

## LANGUAGE AND LITERATURE

DEAN SPANTON.
ASSISTANT-PROFESSOR STURTEVANT.
Required work. In addition to the required work in Rhetoric, students in all courses must take, after the freshman year, at least three hours' work in the department of English Language and Literature. To fulfill this requirement, students will take Literature 65 the second semester, or American Literature 75 and 76 thruout the year.

Majors. The minimum for a major in English Literature is twenty-four term hours. Students choosing a major in English Literature must elect a year of Composition in addition to the required freshman and sophomore Rhetoric.

Order of Work. Courses 65 and 66 are pre-requisite to the more advanced courses. Hence students who desire to take all or most of the work offered in English must elect these courses in their sophomore year, and in no case should they be postponed to the senior year unless a student be sure that he desires no further work in this department.
65. General Introduction to English Literature.-(First and Second Semesters.)
First Semester, M., W., F., $10: 15$.
Second Semester, M., W., F., 7:30.
The chief purpose of this course is to give the student such information and training as will enable him to see what constitutes good literature and will lead him to read good literature with greater intelligence and keener delight.

With Literature 66, this course is pre-requisite to the other courses in English Literature. It is also a required minor for all majors, altho American Literature 75 and 76 may be substituted for it if the student is not planning to take further work in the department.

$$
\begin{aligned}
& \text { 66. The History of English Literature.-(Second Se- } \\
& \text { mester.) } \\
& \text { M., W., F., } 10: 15 .
\end{aligned}
$$

The work includes:
(a) The history of English Literature. Text-book: Long's English Literature.
(b) The reading of masterpieces illustrating literary types and representing the main movements in English Literature. Much reading is required; still more is recommended. Text-book: Newcomer and Andrews' Twelve Centuries of English Poetry and Prose.
67. Chaucer.-(First Semester.)

Tu., Th., $7: 30$. (Two term hours.)
A close study of the best of the Canterbury Tales, and a rapid reading of some other portions of Chaucer's work.
68. Word Study.-(Second Semester.)

Tu., Th., $7: 30$. (Two term hours.)
After a few introductory lectures on language, the work centers in the study of words-their origin, development, significance, and habits.
70. Shakspere.-(Second Semester.)

A study of the development of Shakspere as a dramatist and his place in the Elizabethan Age and in the history of English literature. Most of the plays are read, but the chief stress is on the few greatest tragedies and comedies.

Not given in 1916-191\%.
71. The English Bible as Literature.-(First Semester.)

To the student of literature the Bible has a two-fold interest entirely apart from its religious value: (1) It is itself noble literature; (2) It has influenced the literature of the English-speaking world more profoundly than has any other book. The object of this course is to help the student to see the beauty and the power of the Bible as literature; its narrative, exposition, poetry and song.

Not given in 1916-1917.
73. British Poets and Essayists of the Nineteenth Cen-tury.-(First Semester.)
M., W., F., $8: 25$.

Studies in Wordsworth, Coleridge, Scott, Byron, Shelley, Keats, Macaulay, Lamb, De Quincey.
74. Continuation of Course 73.-(Second Semester.)

Studies in Tennyson, the Brownings, Arnold, Landor, Clough, Rossetti, Morris, Swinburne, Carlyle, Ruskin.
75. American Literature:-(First Semester.)

Tu., Th., $8: 25$.
After a somewhat rapid survey of the literature of the Colonial and Revolutionary Periods, the work centers in a study of the leading poets and prose writers of our later literature.
76. American Literature.-(Second Semester.)

Continuation of Course 75.
Students are not allowed to enter this course in the middle of the year.
79. English Fiction.-(First Semester.)

The development of prose fiction to 19 th century. Study of the evolution of the novel as a distinct literary type as illustrated in the stories popular in Saxon, Medieval, Eliza-
bethan, Puritan, and Restoration Periods. The 18th century novel. Reading of important works.

Not given in 1916-191\%.
80. English Fiction.-(Second Semester.)

Continuation of Course 79.
Study of 19th and 20 th century fiction with special emphasis upon the work of living writers. Not given 19161917.
81. English Drama.-(First Semester.)
M., W., F., 7:30.

Survey of play-writing in England till close of the 18th century, with special attention to the social conditions which created and shaped the plays of each period.

## 82. Modern Drama.-(Second Semester.)

Continuation of Course 81.
Study of the life and work of the great modern dramatists, with some time devoted to the plays of writers not English or American.
9. Greek Masterpieces thru English Translations.-(First Semester.)
M., W., Th., $9: 20$.

For description of this course and the course in Latin Masterpieces in the second semester, both given by Dr. Rockwell, see page 50.
10. Latin Masterpieces thru English Translations.-(Second Semester.)
M., W., Th., $9: 20$.

## PUBLIC SPEAKING

MISS MCEBRIGHT.
A three-years' course is offered in the department of Public Speaking. Progressive educators recognize a welltrained voice with a well-trained mind to be an essential part of education. The voice is the reporter of the individual. A distinct and cultivated enunciation, a wellcontrolled and cultured voice, an effective and natural manner of speech, are all valuable assets in the business, educational and social world.
91. Elementary Course.-(First Semester.)

Tu., Th., S., $10: 15$.
Fundamental principles. Voice technique, tone placing, tone building, enunciation, literary analysis, gesture, evolution of expression-vocal and physical.
92. (Second Semester.) Continuation of 9I.

Literary analysis, gesture, evolution of expression, development of imagination and sympathetic insight into literature.
93. Advonced Course.-(First Semester.)

Tu., Th., 11:10.
Literary, dramatic, artistic interpretation, character study. Shakespeare's plays. Classic comedies.
94. (Second Semester.)

Course 93 continued. Shakespeare's plays, extempore speeches, critiques, personal development.
95. Dramatic Study (First Semester.)

Time of reciting to be arranged when class meets. (One term hour).

The Dramatic Study Club meets once a week for class work. Only junior and senior students who have had one year of Public Speaking or its equivalent are eligible to this
class. Any member of this class pledges himself not only to the class, but to all rehearsals called by the President of the Study Club, or by the Instructor of Public Speaking. This club presents publicly all plays rehearsed. At least one play a semester will be presented.
96. Dramatic Study.-(Second Semester.) Continuation of Course 95.
Instruction will be given those students who enter the oratorical and prize speaking contests.

GERMAN LANGUAGE AND LITERATURE
PROFESSOR BULGER.
MR. VON JANINSKI.

## DR. KOLBE.

The following is suggested as the proper order in which a major in German should be taken by those who enter unprepared in this language. For those who have studied modern languages in secondary schools, a personal conference with the instructor will be found necessary in planning major work.

## REQUIREMENTS FOR GERMAN MAJOR

A minimum of 24 term hours above the freshman year constitutes a major. The following courses are required for a major and must be included: 105, 106, 111, 112 and at least two semesters' work to be selected from the following courses: 107, 108, 115, 116, 123.

ORDER OF COURSES
Students Beginning German in College
should take the introductory courses in the following order:

Freshman Year
Courses 101 and 102.
Sophomore Year
Courses 103 and 104.
Courses 105 and 106.
(Students whose work in the first year has been graded below $G$ are advised to defer Courses 105 and 106 until the third year.)

The advanced courses may be selected as follows:
Course 104 admits to $105,108,115$ and 119.
Course 106 admits to 108,115 and 119.
Course 108 (or 116 or 124 ) admits to $11 \%$.
Course 110 admits to 115,117 and 119.
Students presenting German from Secondary Schools are admitted as follows:

Those presenting one year are advised to enter 101.
Those presenting two are admitted on probation to 103.
Those presenting three or four years will enter 131.

## COURSES OF STUDY

INTRODUCTORY COURSES.
(Given every year.)
101. (First Semester.)
(a) M., W., Th., S., $9: 20$ (b) M., W., F., S., 11:10.

## Beginners' Course.

Prokosch, Introduction to German. Stories and poems. Simple conversation. Students with one year of secondary school German may elect this course but will receive only half credit (2 hours).

## 102. (Second Semester.)

(a) M., W., Th., S., $9: 20$. (b) M., W., F., S., 11:10.

## Beginners' Course.

Review of grammar; rapid oral translation of English sentences into German. The reading of some simple connected text will be started about Christmas and continued to the end of the second semester.

## 103. (a) (First Semester.)

M., W., F., $10: 15$.

This course is intended for those who have completed courses 101 and 102 , or their equivalent. Students with one year of secondary school German will be admitted on probation. The time will be divided between prose composition and reading of easier prose or poetical works. Students with two years of secondary school German must elect this course or 103 b .
104. (a) (Second Semester.)
M., W., F., $10: 15$.

Course 104 carries out in the second semester the work of Course 103.
103. (b) (First Semester.)
M., W., F., 11:10. A parallel course to 103 a , with equivalent work.
104. (b) (Second Semester.)
M., W., F., 11:10. A parallel course to 104 a , with equivalent work.
105. (First Semester.)

Tu., Th., 7:30.
The work of this course is intended primarily for those who have completed courses 101 and 102 (with a grade no lower than G), or courses 103 and 104. The work will con-
sist of lectures, dictated in German, on the history of German literature, and of a review of grammar.
106. (Second Semester.)

Tu., Th., 7:30.
The nature of this course is the same as that of course 105. For the grammar review of course 105 a study of German history will be substituted.
131. (First Semester.)
M., W., F., S., $8: 25$.

Students who present three or four years of secondary school German for entrance are required to take this course. Such students are not eligible to other courses. The work will consist of a rapid review of grammar, prose-composition and translation.
132. (Second Semester.)

A continuation of course 131.

## ADVANCED COURSES

## First Semester

1916-191\%.
115. M., W., Th., at $9: 20$. Prerequisite: Course 104. Schiller's early dramas.

## 1917-1918

123. M., W., Th., at $9: 20$. Prerequisite: Course 104. Lessing.

1918-1919
107. M., W., Th., at $9: 20$. Prerequisite: Course 104.

Goethe's life and his literary productions up to the time of the Italian Journey, will be studied.

## Second Semester

1916-1917.
116. M., W., Th., at $9: 20$. Prerequisite: As for Course 115. Schiller's later literary work and life.

1917-1918.
124. M., W., Th., at $9: 20$. Prerequisite: As for Course 123. Post Classical Writers. 1918-1919
108. M., W., Th., at $9: 20$. Prerequisite: As for Course 107.
Goethe's life and literary productions after his return from Italy.

First Semester

1916-191\%.
109. M., W., F., at $10: 15$. Prerequisite: Course 104. Modern German Literature.

## 1917-1918

117. M., W., F., at $10: 15$. Goethe's Faust. Prerequisite: Any one of the following courses: 108, 118, 115, 123, 111. Only juniors and seniors may elect this course.

## Second Semester

1916-1917.
110. M., W., F., at $10: 15$. Prerequisite: As for Course 109. A continuation of Course 109.

## 1917-1918

118. M., W., F., at 10:15. Prerequisite: As for Course 117. Modern Drama. Rapid reading and discussion of selected works.

## First Semester

1916-1917.
111. Tu. and Th. at $8: 25$. Prerequisite: Course 116 or 118. Interpretation of early texts from translations with particular view to their literary value. A study of the literary movements of the middle ages. Texts: Kluge, Vogt und Koch.

## 1917-1918

104 or 131. A Study of German life and customs.
119. Tu. and Th. at $8: 25$. Prerequisite: Course

## Second Semester

## 1916-1917.

112. Tu. and Th. at $8: 25$. Prerequisite: Course 111. A continuation of the work of 111 .

## 1917-1918

120. Tu. and Th. at 8:25. Prerequisite: As for 119. Advanced theme writing and conversation.

## ROMANCE LANGUAGES

ASSISTANT-PROFESSOR RINES.
Mr. MORIN.
Major: Twenty-four hours in Spanish and French, not including Courses 151 and 152 , constitute a major in the Romance Languages.

FRENCH
ASSISTANT-PROFESSOR RINES.
MR. TULLER.
MR. MORIN.
151. (First Semester.)
M., W., Th., S., 9:20. Fraser and Squair's French Grammar. Reader, Ma Première Visite à Paris.
152. (Second Semester.)
M., W., Th., S., $9: 20$. Fraser and Squair's French Grammar continued. Selected readings. Dictation, memorizing and conversation.
153. (First Semester.)
M., W., F., 7:30. Fraser and Squair's Grammar, Part
II. Reader, Crane's Société Française au XVII e Siècle.
154. (Second Semester.)

Continuation of 153. Grammar work continued. Selected plays of Molière.
155. (First Semester.)

Tu., Th., 11:10. The Short Story in French literature. Balzac, Mérimée, Daudet, de Maupassant.
156. (Second Semester.)

Course 155 continued.
157. (First Semester.)

Tu., Th., 7.30. Modern prose and poetry. Rostand, Maeterlinck, etc.
and is supplemented by laboratory work which follows the lines of modern investigation.
202. Psychology.-(Second Semester.)

Continuation of Course 201. One hour of seminar work a week is given in this semester.
203. Ethics.-(First Semester.)
M., W., F., 10:15. Text-book: Mackenzie.

Moral Philosophy is an elective for two semesters. The subject embraces theoretical and practical ethics and is studied with reference to the origin and development of ethical ideas as viewed in the light of modern philosophy.

## 204. Ethics.-(Second Semester.)

Continuation of Course 203 with Natural Theology. Text-books: Mackenzie and Valentine.
During the last thirteen weeks of the second semester, the course in Ethics is supplemented by a course in Natural Theology. A text-book is used as an outline, while the student is given problems for original investigation and application, and topics for library research.

## LOGIC

PROFESSOR O. E. OLIN.
205. Logic.-(First Semester.)
M., W., F., 7:30. The text-book, Jevons' Advanced Logic. Any other logic is good for reference: Mill, Bain, Hibben, Davis, Robinson, and others.
It would be well for students to elect logic early, because inductive and deductive reasoning are fundamental to all other studies.

## SOCIAL SCIENCE

## Economics, Sociology and Political Science

PROFESSOR O. E. OLIN.
Major: Economics can be combined with Philosophy for a major, Philosophy and Economics, twelve hours of each.

Such students as desire to take all the work in this department are advised to take Courses 251 and 261 in the sophomore year.
The courses are so arranged that they can be taken in consecutive terms, and should be taken in the following order:

Course 251 should precede any other; 261 should precede 262 ; 252 should follow 251 ; the other three courses can then be taken at any time.
251. Political Economy--(First Semester.)
M., W., Th., 9 :20. Text-book: Ely's Outlines, re-
vised edition. References to Seligman, Fetter, Seager,
Laughlin, Blackmar, Bullock, Fairchild, and others.
This is an introductory course, designed for the study of the leading principles of the science, and aiming to acquaint the student with the data of economic inquiry and the nature of economic laws.

## 252 Sociology.-(Second Semester.)

M., W., Th., $9: 20$. Text-book: Fairbank's Introduction to Sociology. References: Small and Vincent, Dealey, Ross, Blackmar, and others.
An elementary course designed to introduce the student to the principles of human association, and to develop the power of observing and analyzing social facts.
253. Sociological Problems.-(First Semester.)

Tu., Th., 11:10.
This course will be an application of the principles brought out in Sociology to a few of the problems of society. The work will be lecture and research, with two hours of field work each week.
254. Economic Problems.-(Second Semester.)

Tu., Th., 11:10.
A detailed study of the problems and theories involved in some of the great economic questions now before the American people, such as transportation, taxation, corporations, money, and banking. The method is lecture, seminar, and research, with reference to late economic books, journals and periodicals.
261. Political Science.-(First Semester.)

- Tu., Th., 10:15. Text: Leacock's Elements of Political Science.
A study of the nature of the state, the organization of government of every kind, and the province of government. The course is designed to open the field of Political Science, and lay a foundation for later college or university work.

262. Federal Government.-(Second Semester.)

Tu., Th., $10: 15$.
This course continues Political Science in the study of Federal Government, by a comparative study of the federal governments of the world. Lecture, library, and research work.
264. Municipal Organization and Management.-(Second Semester.)
Tu., Th., 8:25. (Three term hours.)
A detailed study of the organization and administration of city government in Europe and America. A compara-
tive study of Federal Form, Commission Form, and Manager Form of Government. A careful study of municipal ownership of public utilities. Two lectures each week, and two hours of field work in the municipal departments of Akron. Open only to those who have had Political Science.

## HISTORY

ASSISTANT-PROFESSOR THOMPSON.
Major: Twenty-four hours elected above freshman year constitute a major in History.
273. History of England to the seventeenth century.(First Semester.)
M., W., F., $11: 10$.

The formation of the English race and civilization, the growth of a national government, economic and social conditions, influence of the church. Frequent readings from original sources, and from authorities other than the prescribed text-book.
274. History of the British Empire from the Seventeenth Century to the present time.-(Second Semester.) Continuation of 273.
Emphasis will be laid on the history of the various colonies, and the present problems of the British Empire.
275. History of Western Europe. The development of Europe from the beginning of the eighteenth century of 1815.-(First Semester.)
M., W., F., 8:25.
276. History of Western Europe from 1815 to the present time.-(Second Semester.;
Continuation of 275 .
277. Growth of American Nationality from 1780-1860.(First Semester.)
Tu., Th., $8: 25$.
278. Growth of American Nationality from 1860 to the present time.-(Second Semester.)
Tu., Th., 8:25. Continuation of 277.
279. History of the Renaissance and Reformation. (For Juniors and Seniors only.) Prerequisite 273-274 or 275-276.
Tu., Th., $11: 10$.
280. History of the Renaissance and Reformation.

Continuation of 279.
Tu., Th., $11: 10$.
281. Ancient History-The Orient and Greece.-(First Semester.)
Tu., Th., 10:15.
282. Ancient History-Rome.-(Second Semester.) Tu., Th., $10: 15$.
283. Growth of the French Nation.-(First Semester.)

Tu., Th., 7:30.
285. Groweth of German Nationalism from 1648 to present time.-(First Semester.)
Not given in 1916-1917.
290. Current Events. (For Freshmen only.)-(Second Semester.) Three sections: (a), Tu., 7:30; (b), Th., 7:30; (c), W., 3:00.

MATHEMATICS--PURE AND APPLIED
PROFESSOR LOCKNER.
ASSISTANT-PROFESSOR OLIN.
MR. MORRIS.
mr. EVANS.

## Major in Mathematics and Physics

Calculus, ten term hours.
Surveying, two term hours.
Physics, twelve term hours.
Total, twenty-four term hours.
301. Plane and Spherical Trigonometry.-(First Semester.)

In three sections. Sections a and b, M., W., F., S., at 7:30. Section c, M., W., F., S., at $8: 25$. Required of all freshmen in the B. S. course.

During the first four weeks a review is given in college algebra. This review includes quadratics with graphical representations, variation, inequalities, progressions, partial fractions, logarithms and the general theory of equations Text: Hawkes.

This preliminary work in college algebra is followed by the regular work in trigonometry. This work includes goniometry, trigonometric equations, solution of plane and spherical triangles and construction of tables. Text: Rothrock.

## 302. Plane and Solid Analytic Geometry.-(Second Se-

 mester.)In two sections. Section a, M., W., F., S., at $7: 30$. Section b, M., W., F., S., at 8:25. Prerequisite for the course, Plane and Spherical Trigonometry. Text: Nichols.

The work includes: The straight-line and general equation of the first degree, polar co-ordinates, transformation of co-ordinates, conic sections and equations of the second degree, tangents, normals, loci, parametric equations, poles and polars, the general equation of the second degree, a few higher plane curves, the plane and straight-line in space and surfaces of the second order.

## 305. Differential Calculus.-(First Semester.)

At $8: 25$. M., Tu., W., Th., F. Text: Osborne. Prerequisite: Courses 301 and 302.
The work includes functions, theory of limits, differentiations, series, expansion of functions, indeterminate forms, maxima and minima of functions of one or more variables, partial derivatives, direction of curves, curvatures, tangents and normals, evolutes, involutes, order of contact and envelopes.

## 306. Integral Calculus and Differential Equations.-(Second Semester.)

At 8:25. M., Tu., W., Th., F. Text: Osborne. Prerequisite: Courses 301, 302 and 305.
The work includes integration of standard forms, constant of integration, integration of rational fractions, integration of irrational fractions, trigonometric forms, in-
tegration by parts, integration by substitution, summation and the definite integral, application to curves and simple volumes of revolution, moments of inertia, center of gravity of any solid, application to pressure of fluids, force of attraction, etc. The solution of ordinary differential equations of the first and higher orders.

## 304. Elementary Surveying.--(Second Semester.)

(Two term hours.) One recitation each week, F., $10: 15$, to be accompanied by at least forty hours of field work to be put in during the afternoons and Saturday mornings if necessary. Required of scientific students with major in Mathematics and Physics. Elective for all others except freshmen. Prerequisite: Plane and Spherical Trigonometry.

The work of the course covers the general principles of leveling and transit surveying, and the making of one map. Text: Raymond.

309 Advanced Mathematics.-(First Semester.)
(Two term hours.) Th., S., 9:20.
This course makes a study of the more advanced topics in Algebra, Geometry-Analytic and Synthetic, Calculus and Differential Equations. It also aims to give a general review of the college mathematics, showing the logical connection of the several subjects and their connection with engineering and practical problems.
This course is designed primarily for senior students in both the College of Liberal Arts and Engineering School.
310. Advanced Mathematics.-(Second Semester.)
(Two term hours.) Th., S., $9: 20$.

## ASTRONOMY AND GEOLOGY

PROFESSOR LOCKNER.

## 323. General Geology.-(First Semester.)

Three times a week: M., W., Th., $9: 20$.
The work includes dynamic, structural, physiographical and historical geology. Instruction is given in regard to geological forces and their effects, the formation, alteration and destruction of land masses, the succession of geological ages with regard to both their physical features and their plant and animal life.

Before taking up the historical geology a brief lecture course is given in systematic zoology in order that the student may become somewhat familiar with various forms of animal life.
320. Desćriptive Astronomy.-(Second Semester.)

Three times a week: M., W., Th., $9: 20$. Elective
for those who have completed Mathematics 301.
Text: Young's Manual of Astronomy.
Celestial sphere, astronomical instruments, elementary celestial mechanics, solar system, fixed stars, double stars, nebulæ, constellations. Study one evening a week, demonstration at equatorial, meridian circle and other instruments of the observatory.

PHYSICS
PROFESSOR LOCKNER.
MR. MORRIS.
MR. EVANS.
Major in Mathematics and Physics
Physics, twelve term hours.
Surveying, two term hours.
Calculus, ten term hours.
Total, twenty-four term hours.

## Major in Physics

Physics, twenty-four term hours.
341. General Physics.-(First Semester.)

Four recitations a week: M., Tu., W., Th., 10:15. Text: Loney. The work includes elementary mechanics, wave motion and sound. Required of all scientific students, elective for all others.

Prerequisites for the course: A year of Elementary Physics, a year of Chemistry, Plane and Spherical Trigonometry and Plane and Solid Analytical Geometry.
342. General Physics (Continued).-(Second Semester.)

Text: Kimball. Required of all scientific students, elective for all others. The work includes light, heat, electricity and magnetism. Prerequisite: Course 341.
343. General Physics, Laboratory.-(First Semester.)

Two three-hour laboratory periods: M., W., 1:004:00. (Two term hours.)
344. General Physics, Laboratory.-(Second Semester.)

Continuation of 343.
347. Hydraulics.-(First Semester.)

Three recitations a week: M., W., F., 11:10. Prerequisite courses: Calculus and one year of College Physics.
348. Steam and Gas Engines.-(Second Semester.)

Three recitations a week: M., W., F., 11:10. Prerequisite courses: Calculus and one year of College Physics.
349. Dynamos and Motors.-(First Semester.)

Two recitations a week: Tu., Th., 11:10. Prerequisites: Calculus and one year of College Physics. Text: Sheldon.
This course includes a study of magnetism; a study of applications of Ohm's laws; the theory of commutation; and the theory and characteristics of direct current generators and motors, including series, shunt, and compound wound machines.
350. Dynamos and Motors.-(Second Semester.)

Continuation of 349.
The course includes a preliminary study of the sine wave as applied to alternating currents and of circuits containing resistance, inductance, and capacity; and a study of the characteristics of single-phase and polyphase generators and motors, the induction motor, the synchronous motor, and the transformer.

## CHEMISTRY.

professor simmons.
dr. zimmerli.
Mr. SIbley.
assistant, Mr. Smith.
Major: Twenty-four term hours in Chemistry above the freshman year constitute a major.
351. General Chemistry.--(First Semester.)

A study of the newer theories of Chemistry. Six hours per week. Section a-recitations Tu., Th., $10: 15$; laboratory, 1:00-3:00 M. and F. Section brecitation Tu., Th., $11: 10$; laboratory $3: 00-5: 00 \mathrm{M}$. and F. (Four term hours.)
353. General Chemistry.-(First Semester.)

Text: McPherson and Henderson. Six hours per week. Tu. and Th., 7:30; Tu. and W., 1:00-3:00. (Four term hours.) Required of freshmen beginning Chemistry.
352. General Chemistry.-(Second Semester.)

Six hours per week. Continuation of 351. Inorganic Preparation; Blow-pipe Analysis.
354. General Chemistry.-(Second Semester.)

Six hours per week. Continuation of 353 . (Four term hours.) Inorganic Preparations.
365. Qualitative Analysis.-(First Semester.)

Lecture F., $2: 00$. Laboratory M., W., F., $3: 00-5: 00$.
(Three term hours.) Open to students who have passed 352 or 354.
366. Qualitative Analysis.-(Second Semester.)

Lecture F., 2:00. Laboratory M., W., F., 3:00-5:00. (Three term hours.)
357. Organic Chemistry.-Recitations and Laboratory Practice.-(First Semester.)
Six hours per week, M., W., $9: 20$; Th., 1:00 to 5:00. (Three term hours.) A study of the aliphatic series of hydrocarbons and their derivatives.
Required of all students who select Chemistry as their major.
358. Organic Chemistry.-(Second Semester.)

A continuation of Course 357.
359. Quantitative Analysis.-(First Semester.)

Lecture and Laboratory Practice, M., W., F., $3: 00$ 5:00. (Three term hours.)
360. Quantitative Analysis.-(Second Semester.)

A continuation of 359.
363. Chemistry of India Rubber.--(First Semester.)
F., 7:30; Tu. and Th., 1:00-5:00. (Three term hours). Lecture and laboratory covering the theory and practice in the chemistry of india rubber.

The course supposes a previous course of a year of organic chemistry and a year of quantitative analysis.
364. Chemistry of India Rubber.-(Second Semester.)

Continuation of 363.
367. Advanced Organic Chemistry.-Lectures, Recitations and Laboratory Practice.-(First Semester.)

Six hours per week. Tu., $1: 00$ to $5: 00 ; \mathrm{Tu} ., \mathrm{Th}$., 10:15. (Three term hours.) A study of the Aromatic series of hydrocarbons and their derivatives.
368. Advanced Organic Chemistry.-(Second Semester.) A continuation of Course 367.
(Required of students who major in Chemistry.)
369. Advanced Practical Chemistry.---(First Semester.)

Laboratory and Seminar. (Three term hours.) F., $1: 00-5: 00$; S., 7:30-12:00. (Courses 360 and 368 required.) The course will deal with problems of an industrial nature and with cooperative work in connection with the Bureau of City Tests.

Advanced Practical Chemistry.-(Second Semester.)
Continuation of 369.

## BIOLOGY

PROFESSOR PLOWMAN.
Twenty-four semester hours above the freshman year in Biology will be the minimum requirement for a major in this department. Minor requirements are stated on page 46. Students who desire to do their major work in this department should carry Biology 401-402 as their first year science, and should do their required work in Physics and Chemistry in the second and third years, respectively. Prospective students in this department are. requested to observe that almost all courses above the freshman year are offered in alternate years and that schedules must be arranged accordingly.
401. General Biology.-(First Semester.)

Lectures, Tu., Th., $8: 25$. Laboratory: section a, M., W., 1:00 to $3: 00$; section b, Tu., Th., $1: 00$ to $3: 00$. (Four term hours.)
A study of parallel groups of the lower and simpler plants and animals, seeking to familiarize the student with the fundamental laws and processes of living things, and to emphasize the essential unity of the whole realm of life.

No text-book is used in this course, but a special notebook, including outlines of the biosphere, chart outlines, and all necessary paper, will be supplied by the department, at a price of $\$ 1.00$.
402. General Biology.-(Second Semester.)

A continuation of 401 .
While the studies of the first semester deal with the first three phyla of the animal kingdom and with thallophytes, the course in the second semester includes the remaining invertebrate animals and non-flowering plants, together with a very brief examination of a few higher animals and plants, for the purpose of general comparison.

The courses in General Biology are designed to meet the needs of students seeking the broadest liberal culture, as well as of those who wish to specialize in biological lines. When taken as minors under another department, these courses should be carried not later than the sophomore year.
403. Vertebrate Zoology.-(First Semester.)

Lectures M., W., F., 8:25. Laboratory four to six hours per week. (Four term hours.) Given in 19151916, and alternate years.
A study of the comparative anatomy and histology of vertebrate animals, together with their oecologic relations, economic importance, and outlines of their classification.
404. Animal Embryology.-(Second Semester.)

Lectures M., W., F., 8:25. Laboratory four to six hours per week. (Four term hours.) Given in 19151916 and alternate years.
A comparative study of the early developmental stages of animals. Laboratory work is confined chiefly to a study of the embryology of the chick. In the lectures considerable attention is given to the study of thremmatology.
405. Vascular Plants.-(First Semester.)

Lectures M., W., F., 8:25. Laboratory four to six hours per week. (Four term hours.) Offered in 1916-1917, and alternate years.
A study of the morphology, anatomy, physiology and oecology of vascular plants, with special reference to their economic interest and importance, including particularly those forms that supply foods, drugs and timber.
407. Human Physiology.-(First Semester.)

Lectures and recitations, M., W., Th., 9:20. Three to five hours' laboratory work per week. (Four term hours.) Offered for 1916-1917, and alternate years. Men's course.

A detailed study of the human mechanism and its functioning. Halliburton's text, or its equivalent, is used in the class, while constant reference is made to the works of Gray, Flint, Howell, and others. Each student should be provided with a good pocket medical dictionary. A fair knowledge of physics and chemistry will be found quite essential in the work of this course. Open only to college men.
408. Human Physiology.-(Second Semester.)

Continuation of 407. Men's course.
409. Human Physiology.-( First Semester.)

Lectures and recitations, M., W., Th., $9: 20$. Three to five hours' laboratory work per week. (Four term hours.) Offered for 1915-1916, and alternate years. Women's course.
This course is essentially the equivalent of course 407 , but with greater emphasis upon its hygienic relations, and the physiology of development. The same textbook and references are used here as in course $40 \%$. Open only to college women.
410. Human Physiology.-(Second Semester.)

Continuation of 409 . Women's course.
413. Freshman Hygiene.-(First Semester.)

Lectures, Tu., 3:00. (One term hour.)
A course of lectures dealing primarily with the subject of personal hygiene, to the end that young college men may better conserve their energy and health, and thereby fit themselves for lives of the greatest efficiency, as students and as citizens. Required of all first-year men.

## 415. Freshman Hygiene.-(First Semester.)

Lectures, W., $3: 00$. (One term hour.)
A parallel course to 413 , particularly adapted to the needs of young college women. Required of all first-year women.
416. Organic Evolution.-(Second Semester.)

Lectures, M., W., F., 8:25. Laboratory three to four hours per week. (Four term hours.) Offered for 1916-1917, and alternate years.
A survey of the history of the doctrine of organic evolution, together with a detailed consideration of its underlying principles, and its bearing upon other fields of thought and investigation. Heredity and eugenics are dealt with from the point of view of possible human betterment.
418. Conservation.-(Second Semester.)

Two lectures per week, and reference reading. (Two term hours.)
A study of natural resources, such as minerals, fuels, timber, soils, water, plant and animal crops, and human life.
It will be observed that courses $401-402,413,415$ and 418 are offered every year. Courses 403-404 alternate with 405-416, and courses 407-408 alternate with courses 409410. General Biology $401-402$ is essential as an introduction to any of the more advanced courses, but above the freshman year the work of this department may be taken in any order of sequence.

## PHYSICAL EDUCATION

## mr. SEFTON, DIRECTOR.

Physical education is conducted under the direct supervision of an experienced physical director, who is a member of the college faculty. He is assisted by an associate director for women. The main floor of the gymnasium ( 80 by 50 feet) is well equipped with modern gymnastic apparatus. It is used by the men on Monday, Wednesday, and Thursday, and by the women on Tuesday and Friday afternoons.

College students of the three upper classes desiring to specialize as coaches or instructors in certain sports, games, or events, may do so by conferring with the physical director.
The aims of the department are to develop organic power, the basis of vitality, the prerequisite to physical and mental efficiency ; to secure and maintain good posture, a harmonious muscular development, and a certain degree of bodily skill and grace.
A thoro physical examination is given, and measurements taken of all students on entering and also on leaving the University. Physical defects, abnormalities, and weaknesses are noted, and judicious, healthful exercise is prescribed to fit the student's individual needs; this may include athletic sports or remedial gymnastics.
All freshmen are required to take the course in Hygiene given by Dr. Plowman the first semester, one hour a week.

## PHYSICAL TRAINING FOR MEN

MR. SEFTON.
All first-year men are required to take the following work: 32 hours of out-door work; 24 hours in-door class work; 8 hours lecture work, (hygiene, dietetics and exercises).

For this work they are to receive one hour credit.
The gymnasium is one hundred feet in length and fifty feet in width. On the ground floor are locker rooms and bath rooms. Above is the practice floor where exercises are conducted. Directly over the practice floor is the running track.
A four-acre athletic field is provided for the use of the men students, and all intercollegiate and other games and meets are held there. The field is equipped with a grand-
stand, dressing rooms, cinder running track, baseball diamond, and football field with bleachers to accommodate 4000 spectators.

The intercollegiate sports are under the government of the Ohio Athletic Conference, the faculty committee appointed by the President, and a Board of Control consisting of members from the faculty and representatives of the student body elected by the students.

A limited number of intercollegiate games are scheduled subject to the approval of the faculty.

The Athletic Association is honored by the gift of the Medal presented by Mr. Frank Talbot Fisher, of New York, and also by his very generous donation of prizes for the Track Meet. They consist of two cups of the value of $\$ 50$ each and a Medal, and are given under the following conditions:

The Individual Cup is to be awarded to the athlete making the greatest number of points in the Track Meet, and must be won by him three years in succession in order to become his permanent property.

The Class Cup is the permanent property of the Athletic Association and is to be competed for by classes each year. An honorary position upon the cup is awarded the name of the class scoring the greatest number of points in each annual Track Meet.

The medal is to be given to the athlete scoring the greatest number of points, and at once becomes his personal possession. One such Medal is to be offered for each annual Track Meet.

The Individual Cup and the Medal are open to all bona fide students. The Class Cup is open to the four classes.

The annual Track Meet to compete for these prizes will be held early in June of each year.

## PHYSICAL TRAINING FOR WOMEN

miss allchin.
The regular work in physical training for women will begin about the middle of November and will continue for eighteen weeks. The work is required of all first-year students, and may be elected by others. The course will include gymnastics, dancing, and athletics.

## SCHEDULE FOR FIRST SEMESTER

monday
English Drama 81
French 153
7:30 Logic 205
Math. 301a\&b
Greek 1

TUESDAY
Roman Law 41

English Drama 81
French 153
Logic 205
Math. 301a\&b
Greek 1

Cicero 25
Psychology 201
Hist. West. Eur. 275
Math. 301c
Calculus 305
German 131
Botany 405
19th Cent. Lit. 73
Greek Masterpieces 9
German 101 a
Schiller 115
Pol. Econ. 251
Geology 323
French 151
French 151
Rhetoric $51 \mathrm{a} \& \mathrm{~b}$
Organic Chem. 357
Physiology $407{ }^{\circ}$

Intr. to Eng. Lit. 65
Intr. to Eng. Lit. 65
Elem. Pub. Sp. 91
Pol. Sci. 281
Anc. Hist. 281

| 10:15 | Ethics 203 | French 163 Physics 341 | Ethics 203 |
| :---: | :---: | :---: | :---: |
|  | Physics 341 |  | Physics 341 |
|  | Rhet. 51c\&d |  | Rhet. 61e\&d |
|  | $\begin{aligned} & \text { German 103a } \\ & \text { Mod. Germ. Lit. } 109 \end{aligned}$ | Chem. 351a Adv. Org. Chem, 367 | $\begin{aligned} & \text { German 103a } \\ & \text { Mod. Germ. Lit. } 109 \\ & \hline \end{aligned}$ |
| 11:10 | Livy 27 | Roman Private Life 37 <br> Argumentation 53 <br> Adv. Pub. Sp. 93 | Livy 27 |
|  | $\underset{\text { German }}{\text { German }} 101 \mathrm{~b}$ | French Short Story 155 Sociol. Prob. 253 <br> Renaiss. Hist. 279 | German German 101b 103b |
|  | Spanish 171 <br> Hist. of Eng. 273 |  | Spanish 171 <br> Hist. of Eng. 273 |
|  | Hydraulics 347 | Chem. 351b <br> Dyn. and Mot. 349 |  |
| $\begin{gathered} 1: 00 \\ \text { to } \\ 3: 00 \end{gathered}$ | Fresh. Gym, (Women) $(2: 00-4: 00)$ | $\begin{aligned} & \text { AFTERNOON } \\ & \text { Fresh: Gym. } \\ & \left(\begin{array}{l} \text { Gen } \end{array}\right. \end{aligned}$ | Fresh. Gym. (Men) $(2: 00-5: 00)$ |
|  | Fresh. Chem. 351a | Fresh. Chem. 353 | Fresh. Chem. 353 |
|  | Biology Physics Lab. Lat (1:00-4:00) | Rubber Chem. 363 Adv. Org. Chem. 367 Biology 401b | Biology 401a Physics Lab Rat 343 <br> (1:00-4:00) |
| $\begin{gathered} 3: 00 \\ \text { to } \\ 5: 00 \end{gathered}$ | Fresh. Chem. 351b Qual. Anal. 365 | Rubber Chem. 363 Adv. Org. Chem. 367 | Qual. Anal. 365 |
|  | Quan. Anal. 359 | Hygiene 413 <br> (3:00 to $4: 00$ ) | Quan. Anal. 359 <br> Hygiene 415 <br> (3:00 to 4:00) |

ADDITIONAL STUDIES
The time for the following studies will be arranged to suit the convenience of instructor and student: Latin Teachers' Course 39

## SCHEDULE FOR FIRST SEMESTER


(two term hours), Dramatic Study Club 95 (one term hour), French Diary 165 (one term hour), Conversational French 167 (two term hours ), Botany Laboratory 405, Physiology Laboratory 407.

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ADDITIONAL STUDIES
The time for the following studies will be arranged to suit the convenience of instructors and students: Latin Teachers' Course 40

SCHEDULE FOR SECOND SEMESTER

THURSDAY
Class. Arch. 20
Word Study 68
7:30 Germ. 106
French Mod. Lit. 158
Curreat Events 290b
Chem. 354

Greek ${ }_{2}^{\text {FRIDAY }}$
Intr. to Eng. Lit. 65
Mod. Drama 82
Moliere 154

| $\begin{array}{l}\text { Math. 302a } \\ \text { Rubber Chem. 364 }\end{array}$ | $\begin{array}{l}\text { Math. 302a } \\ \text { Adv. Prac. Chem. 370 } \\ (7: 30-12: 00)\end{array}$ |
| :--- | :--- |
| Pliny 26 | $\begin{array}{l}\text { Pliny 26 } \\ \text { Horace 32 }\end{array}$ |
| $\begin{array}{l}\text { 19th Cent. Lit. 74 } \\ \begin{array}{l}\text { Germ. } 132 \\ \text { Psych. 202 }\end{array} \\ \text { Germ. 132 }\end{array}$ |  |



(two term hours), Dramatic Study Club 96 (one term hour), French Diary 166 (one term hour), Conversational French 168 (two term hours), Physiology Laboratory 408, Organic Evolution Laboratary 416, Conservation 418 (two term hours).

# COLLEGE OF ENGINEERING 

Fred E. Ayer, C. E., Dean
GENERAL INFORMATION
The College of Engineering was established by the Directors of the Municipal University in 1914. Applicants are assigned to shop work in July and accepted as students in September.
A five-year co-operative course in engineering, patterned after the "Cincinnati Plan," has been adopted.
The "Cincinnati plan" requires the practice of engineering to be learned under actual commercial conditions and the science underlying this practice to be taught in the University by trained educators. Its aim is to give the student a thoro training in both the theory and the practice of engineering. The students are grouped in two sections, one of which is at work and the other in attendance at the University. Thus, during any bi-weekly period, one-half the students are at the University and one-half are in the shops. At the end of the period, those who were at the University go to the shops, and those who were in the shops go to the University.

Five years of eleven months each are required to complete the course. Each student is allowed a vacation of one week at Christmas time, one week at Easter or during commencement week, and two weeks in the latter part of the summer.
The number of students that can be accepted in the fall of 1916 is limited both by the positions open in the factories of Akron and by the facilities of the University; therefore, applications for admission should be filed with the Dean of the Engineering College before July 1, 1916. Students applying after that date will be admitted if any positions remain open, or if any vacancies occur due to resignations.

While a student is at work, he is subject to all the rules and regulations imposed by his employer upon the other employees. All existing labor laws and conditions, including those pertaining to liability for accident, apply to the student the same as to any other employee.
In order to operate a co-operative course in engineering, the Engineering College must be located in or near an industrial center. There are over six hundred colleges and universities in the United States, and comparatively few of them are so located that such a course is practicable. Akron is essentially a manufacturing center, and the President and Directors of the Municipal University of Akron selected this type of engineering education as being the latest and the one best adapted to the city's needs. No other courses in engineering will be offered.

## SHOP WORK

The Dean of the College of Engineering and the employer so plan the work that the student gets a carefully graded training beginning with work requiring no skill or experience and ending with actual engineering work.
The shop work and the University work will be co-ordinated by a technically trained man, experienced in shop practice. Thruout the five years of University work he will give courses whose aim is twofold. First, they supplement the shop training by explaining the different operations, the sequence of work, the technicalities of the machines, and, in short, any part of the work which the student does not understand, and which the shop foreman has not time to explain. This shows the student the vast educational opportunities open to him in his shop work and makes him more useful to his employer. Secondly, these courses cover the field of factory organization and cost accounting, routing of work for efficient production, study of the conditions leading to maximum production, and the influence of shop environment. The instruction given in all the courses is
carefully planned to develop in each student the power of observation and the ability to analyze the problems arising in his work.

The shop work, properly co-ordinated with the University training, furnishes a large part of the technical detail required in engineering subjects.

WAGES
Engineering students are paid for their work in the shops at the same rate as other employees. Beginners will be paid a little more than apprentices and will be increased according to a rate agreed upon by the employer and the Dean of the Engineering College. Specific information will be given applicants previous to the beginning of their work. Students are paid only for the time actually employed in the shops, and receive their wages direct, the same as any other employee.

## ADMISSION

Candidates for admission must be at least sixteen years of age, and must present fifteen units of secondary school work. Students will be admitted with entrance conditions amounting to not more than one unit. Such conditions must be removed during the freshman year.

> ENTRANCE REQUIREMENTS

The following units must be presented without conditions:
English . . . . . . . . . . . . 3 units

Mathematics .......... $21 / 2$ units ( $1 / 2$ unit of Solid Geometry required)
Foreign Language .... 2 units (In one language)
History ............... 1 unit
Chemistry or Physics.. 1 unit
Elective ................ $51 / 2$ units
COURSES OF STUDY
The courses of study given in the Engineering College
will be of the same grade as those required in any recognized technical institution. The student will be required to maintain good standing in both his shop and University work, and the work in both places will be so planned that he will be equipped at graduation to enter the field of practical engineering at once without further preliminary training by his employer.

## OUTLINE OF COURSE

(First three years.)
FRESHMAN YEAR

| First Semester $\quad \begin{gathered}\text { Exercises per } \\ \text { alternate week }\end{gathered}$ | Second Semester $\begin{gathered}\text { Exercises per } \\ \text { alternate week }\end{gathered}$ |
| :---: | :---: |
| Mathernatics 725 and 727.6 | Mathematics 728 .......6 |
| French 717 ............. 6 | French 718 |
| Chemistry $741 . . . . . . . . .8$ | Chemistry 742 |
| English $701 . . . . . . . . . . .1$ | English $702 . . . . . . . . .11$ |
| Co-ordination $801 . . . . .2$ | Co-ordination $802 . . . . .2$ |
| Mechanical Drawing 811.2 | Descriptive Geom. 812.. 2 |
| Summer Term |  |
| Mathematics, 729 | 6 |
| Metallurgy, 743 |  |
| Surveying, 830 | 10 |

SOPHOMORE YEAR


| Mathematics 733 |
| :---: |
| Metallurgy, 743 |
| Materials Laboratory (M. E's only) |
| Surveying 831 (C. E's only) |


| PRE-JUNIOR YEAR |  |
| :---: | :---: |
| First SemesterExercises per <br> alternate week | Second Semester $\begin{gathered}\text { Exercises per } \\ \text { alternate week }\end{gathered}$ |
| Applied Mechanics 815. 6 | Strength of Materials |
| Steam Engineering 825. 6 | 816 .................. 6 |
| English Literature 711. 3 | English Literature 712.. 3 |
| Roofs and Bridges 827. 7 | Hydraulics 820 . . . . . . 3 |
| (C. E's only) | Roofs and Bridges 828.10 |
| Materials Laboratory .. 2 | (C. E's only) |
| (C. E's only) | Steam Engineering 826.6 |
| Mechanism 819 ........ 3 | (M. E's only) |
| (M. E's only) | Machine Design 818.... 6 |
| Kinematic Drawing 821. 2 (M. E's only) | (M. E's only) |
| Graphics of Mechanism |  |
| 823 ..................... 4 <br> (M. E's only) |  |
| DEGREES |  |

The degrees of Civil Engineer and Mechanical Engineer will be given to those students who satisfactorily complete the required work in those departments. In addition to his diploma, each student will receive a certificate showing his shop experience in detail.

## FEES

Resident Students:-According to the rules adopted by the Board of Directors, all students who are residents of the City of Akron or whose parents are residents of Akron, are entitled to free tuition at the University. They are, however, required to pay an incidental fee of $\$ 10.00$ per semester, covering registration, incidentals and student activity fee. If not paid within one week after registration the fee is $\$ 12.50$ per semester. Small fees to cover breakage and materials are also charged to all students in laboratory courses.

Non-resident Students:- The tuition for non-resident students is $\$ 25.00$ for the first semester, $\$ 25.00$ for the second semester and $\$ 10.00$ for the summer term in addition to the incidental fee of $\$ 10.00$ per semester. Small fees to cover breakage and materials are charged to all students in laboratory courses. If not paid within one week after registration the tuition fee is $\$ 30.00$ for the first and second semesters and the incidental fee is $\$ 12.50$ and the tuition for the summer term is $\$ 12.50$.

## Laboratory Fees

The following laboratory fees are charged for courses in the College of Engineering. By action of the Directors these laboratory fees are collectable strictly in advance and are a necessary pre-requisite to enrollment in classes.
Chemistry 741, 742, per semester. . . . . . . . . . . . . . . . . $\$ 3.00$
Deposit for breakage in all courses, per semester..... 5.00 Surveying 830, 831, per summer term............... . 2.00 Materials Laboratory, per semester. . . . . . . . . . . . . . . . 2.00

The unused portion of the breakage deposit will be returned at the end of each semester.

## ESTIMATED EXPENSE OF FRESHMAN YEAR

First Semester


Second Semester


Summer Term

| Tuition | Free | \$10.00 |
| :---: | :---: | :---: |
| Fees | \$2.00 | 2.00 |
| Books | 5.00 | 5.00 |
|  |  |  |

Board and room can be obtained at from $\$ 5.00$ to $\$ 7.00$ per week. The minimum wage paid is ten cents per hour or $\$ 5.50$ per week for time worked.

The general system of numbering and arrangement is according to the following order:
English.... .......................................701-712
German ................................................ $713-716$
French ................................................. . $1717-720$
Economics and Political Science.....................721-724
Mathematics ......................................... $725-740$
Chemistry .......................................... . . 741-770
Biology and Geology................................ 771-779
Physics and Mechanics..............................780-800
Engineering Subjects ................................801-900

## ENGLISH

English Composition will be taught by the "laboratory method." Inspection trip, laboratory, and special reports will be written under the direction of the English Department. These reports will be criticized by the Engineering Department for contents and by the English Department for language. The written work will be supplemented by conferences and lectures. This work will continue thruout the five years of the course, the object being to finally impress the student with the fact that his language, in reports, recitations, examinations, etc., is always under the criticism of the English Department. The work will receive one hour of credit per semester.
In addition to English Composition a three-hour course in English Literature will be given thruout the third year.

## 701. English Composition (Freshman Year, First Semes-

 ter.)(One Hour.)
702. English Composition (Freshman Year, Second Semester.)
(One Hour.)
703. English Composition (Sophomore Year, First Semester.)
(One Hour.)
704. English Composition (Sophomore Year, Second Semester.)
(One Hour.)
705. English Composition (Pre-Junior Year, First Semester.)
(One Hour.)
706. English Composition (Pre-Junior Year, Second Semester.)
(One Hour.)
707. English Composition (Junior Year, First Semester.) (One Hour.)
708. English Composition (Junior Year, Second Semester.)
(One Hour.)
709. English Composition (Senior Year, First Semester.) (One Hour.)
710. English Composition (Senior Year, Second Semester.)
(One Hour.)
711. English Literature (Pre-Junior Year, First Semester.)
(Three Hours.)
The object of this course is to acquaint the student with different types of good literature and develop in him a taste for good reading. Much reading is required and still more is recommended.
712. English Literature (Pre-Junior Year, Second Semester.)
(Three Hours.) A continuation of 711 .

## FRENCH

Engineering students are required to take two years of French.
717. (Freshman Year, First Semester.)
(Six Hours.)
Fraser and Squair's French Grammar. Francois and Giroud's Simple French Reader. Practice in pronunciation, dictation and composition.
718. (Freshman Year, Second Semester.)
(Six Hours.) A continuation of the work of 717.
In addition to the reader begun in the first semester, the class will read Bowen's First Scientific French Reader.
719. (Sophomore Year, First Semester.)
(Six Hours.)
Reading of French technical books and journals.
720. (Sophomore Year, Second Semester.)
(Six Hours.) Continuation of 719.
German 715 and 716, the reading of German technical journals, etc., will be given to Sophomores during the year 1916-1917.

## MATHEMATICS

725. College Algebra.-(Freshman Year, First Semester.) (Two Hours.)
This course aims to give a general review of advanced algebra. The work includes quadratics with graphical representations, variation, partial fractions, logarithms and the general theory of equations.
726. Plane Trigonometry.-(Freshman Year, First Semester.)
(Four Hours.)

The work includes goniometry, trigonometric equations, solution of plane triangles and construction of tables. Effort is made to acquaint the student with the means of testing the accuracy of his work and to develop habits of neat arrangement and rough checking in his computations. Numerous applications to practical problems are made.
728. Plane Analytic Geometry.-(Freshman Year, Second Semester.)
(Six Hours.)
The work includes:--The straight-line and general equations of the first degree, polar co-ordinates, transformation of co-ordinates, conic sections and equations of the second degree, tangents, normals, loci, parametric equations, poles and polars, the general equation of the second degree, and a few higher plane curves.

## 729. Plane Analytic Geometry.-(Freshman Year, Sum-

 mer Term.)(Six Hours.) A continuation of 728.

## 731. Differential Calculus.-(Sophomore Year, First Semester.)

(Six Hours.)
The work includes functions, theory of limits, differentiations, series, expansion of functions, indeterminate forms, maxima and minima of functions of one or more variables, partial derivatives, direction of curves, curvatures, tangents, normals, evolutes, involutes, order of contact and envelopes.
732. Integral Calculus-(Sophomore Year, Second Semester.)
(Six Hours.)
The work includes integration of standard forms, constant of integration, integration of rational fractions, trigonometric forms, integration by parts, integration by substitu-
tion, summations and definite integral, application to curves and simple volumes of revolution.
733. Differential Equations.-(Sophomore Year, Summer Term.)
(Six Hours.)
The work includes the solution of ordinary differential equations of the first and second order, and numerous applications of the calculus to problems involving moment of inertia, center of gravity, pressure of fluids, force of attraction, etc.
734. Engineering Mathematics.-(Entire Year.)
(Four Hours.)
This course is given during the senior year, and gives a review of the algebra, trigonometry, analytical geometry, calculus and analytical mechanics, showing the logical connection of the several subjects and their connection with engineering problems.

## CHEMISTRY

741. (Freshman Year, First Semester.)
(Four hours recitation, four periods laboratory.)
A study of the newer theories of Chemistry with special attention to their application to commercial problems.
742. (Freshman Year, Second Semester.)
(Four hours recitation, four periods laboratory.)
A continuation of 741 .
During the last half of the semester each student is required to make, and test before the class, at least one salt of each metal.

This course is planned to develop originality in the student rather than cover a large field. He is thrown upon his own resources as much as possible and taught how to attack a problem.

## 743. Metallurgy-(Summer Term.)

(Six Hours.)
A review of the properties of metals and ores and the principles used in the present practice of metallurgy.

PHYSICS
781. General Physics.-(Sophomore Year, First Semester.) (Six Hours.)
The work includes dynamics, velocity, acceleration, impulse, work and energy, projectiles, mechanics of liquids and gases, the properties of matter and its internal forces, wave motion, general principles of sound and of heat.
783. General Physics Laboratory.-(Sophomore Year, First Semester.)
(Two Periods.)
Experiments involving mechanics, sound and heat.
782. General Physics.-(Sophomore Year, Second Semester.)
(Six Hours.)
The work includes light, electricity and magnetism.
784. General Physics Laboratory.-(Sophomore Year, Second Semester.)
(Two Periods.)
Experiments involving light, magnetism and electricity.

## ENGINEERING

801. Co-ordination.-(Freshman Year, First Semester.) (Two Hours.)
Discussion of questions arising in students' work. Observation sheets, detailed reports and problems.
802. Co-ordination.-(Freshman Year, Second Semester.) (Two Hours.)
Continuation of 801.
803. Co-ordination.-(Sophomore Year, First Semester.) Continuation of 802.
804. Co-ordination.-(Sophomore Year, Second Semester.) Continuation of 803.
805. Mechanical Drawing.-(Freshman Year, First Semester.)
(Four Hours.)
Standard details of structural shapes, bolts, nuts, screws, etc. Free hand lettering and sketching. Elementary descriptive geometry.
806. Descriptive Geometry.-(Freshman Year, Second Semester.)
(Four Hours.)
Projections of lines, intersections of planes, projections of solids with practical applications. Free hand lettering and sketching.
807. Graphic Statics.-(Sophomore Year, First Semester.) (Four Hours.)
The graphical solution of elementary problems in mechanics.
808. Machine Drawing.-(Sophomore Year, Second Semester.)
(Four Hours.)
Detail drawings from measurements of machines.
809. Analytic Mechanics.-(Pre-Junior Year, First Semester.)
(Six Hours.)
The work includes the rectilinear motion of a particle with applications, relative motion, simple harmonic motion, the curvilinear motion of a particle, the motion of rigid bodies, the kinetics of a particle and of the mass center of a rigid body, constrained motion, the kinetics of a rigid body, work, energy and the applications to machines, im-
pact and also the solution of numerous problems involving the principles of mechanics.
810. Strength of Materials.-(Pre-Iunior Year, Second Semester.)
(Six Hours.)
This work includes stress, strain, tension and compression, shearing force, torsion, bending, shearing and combined stresses, curves for shearing stresses and bending moments, the slope and deflection of beams, columns and struts, stress in members of frames, framed structures and miscellaneous problems involving an application of the general theory of the subject.

## 817. Materials Laboratory.

Tensile, compressive, transverse and torsional tests of materials of construction, including wood, iron, brass, steel and brick.
818. Machine Design.-(Pre-Junior Year, Second Semester.)
(Six Hours.)
The application of fundamental formulae to the design of simple machine elements.
819. Mechanism.-(Pre-Junior Year, First Semester.)
(Three Hours.)
Kinematics of machines accompanied by numerical problems.
820. Hydraulics.-(Pre-Junior Year, Second Semester.) (Three Hours.)
Theory of the flow of water thru orifices, tubes, pipes and channels.
821. Kinematic Drawing.-(Pre-Iunior Year, First Semester.)
(Two Hours.)

Graphic representation of various methods of transmitting and modifying motions by means of cams, links, and toothed wheels.
823. Graphics of Mechanism.-(Pre-Junior Year, First Semester.)
(Four Hours.)
A study of the forces involved in mechanisms, their direction, magnitude, etc.
825. Steam Engineering.-(Pre-Junior Year, First Semester.)
(Six Hours.)
Elements and economy of simple and complete steam plants.
826. Steam Engineering.-(Pre-Junior Year, Second Semester.)
(Six Hours.) A continuation of 825 .
827. Roofs and Bridges.-(Pre-Junior Year, First Semester.)
(Seven Hours.)
Calculation of stresses in framed structures under static and moving loads by both graphic and analytic methods.
828. Roofs and Bridges.-(Pre-Junior Year, Second Semester.)
(Ten Hours.) A continuation of 827 .
830. Surveying.-(First Summer Term.)
(Ten Hours.)
The theory and use of the transit and level. The surveying of areas and computations of the same. Maps and profiles.
831. Surveying.-(Second Summer Term.)
(Ten Hours.) A continuation of 830 .
Tests and adjustments of instruments. Topographic Surveying.

## Schedule of Classes

## FIRST SEMESTER

1916-1917

| 7:30 | $\begin{aligned} & \text { MONDAY } \\ & \text { French } 717 \\ & \text { Math. } 731 \\ & \text { Steam Eng'r'g } 825- \end{aligned}$ | $\begin{aligned} & \text { TUESDAY } \\ & \text { French } 717 \\ & \text { Math. } 731 \\ & \text { Steam Eng'r'g } 825 \end{aligned}$ | WEDNESDAY <br> French 717 <br> Math. 731 <br> Steam Eng'r'g 825 |
| :---: | :---: | :---: | :---: |
| 8:25 | German 715 French 719Math. 727 - <br> App. Mech. 815 - | German 715 <br> French 719 <br> Math. 725 - <br> App. Mech. 815 | German 715- French 719 Math. 727 App. Mech. 815 |
| 9:20 | Physics 781 Coordination 801 | Assembly | Physics 781 <br> Coordination 801 |
| 10:15 | Chemistry 741 Coordination 803 | Chem. Lab. 741 <br> Physics Lab. 783 | Chemistry 741 Coordination 803 |
| $11: 10$ | English Lit. 711~ | Roofs \& Bridges 827 <br> Mechanism 819 <br> Chem. Lab. 741 <br> Physics Lab. 783 | English Lit. 711 |
| $\begin{gathered} 1: 00 \\ \text { to } \\ 5: 00 \end{gathered}$ | Graphic Statics 813 - <br> Kinematic Dr'w'g 821 <br> Roofs \& Bridges 827= <br> Eng. Conference 701- | AFTERNOON <br> Mech. Drawing 811* (1:00-3:40) <br> Roofs \& Bridges 827 <br> Eng. Conference 703- | $\begin{aligned} & \text { Mechan. Dr'w'g } 811 \\ & \text { (1:00.3:40) } \\ & \text { Materials Lab. } 817 \end{aligned}$ |

## SECOND SEMESTER

1916-1917

| 7:30 | MONDAY French Ti8 Math. 732 Steam Eng'rg 826 Roofs \& Bridges 828 | TUESDAy <br> French 718 <br> Math. 732 <br> Steam Eng'r's 826 <br> Roofs \& Bridges 828 | WEDNESDAY <br> French 718 <br> Math. 732 <br> Steam Eng'r'g 826 <br> Roofs \& Bridges 828 |
| :---: | :---: | :---: | :---: |
| 8:25 | German 716 <br> French 720 <br> Math. 728 <br> Strength of Mat. 816 | German 716 <br> French 720 <br> Math. 728 <br> Strength of Mat. 816 | German 716 <br> French 720 <br> Math. 728 <br> Strength of Mat. 816 |
| 9:20 | Physics 782 Coordination 802 | Assembly | Physics 782 <br> Coordination 802 |
| 10:15 | Chemistry 742 Coordination 804 | Chemistry Lab. 742 Physics Lab. 784 | Chemistry 742 Coordination 804 |
| 11:10 | English Lit. 712 | Hydraulics 820 Chemistry Lab. 742 Physics Lab. 784 | English Lit. 712 |
| 1:00 | Mach. Drawing 814 <br> Mach. Design 818 | AFTERNOON Descrip. Geom. 812 (1:00-3:40) | Descrip. Geom. 812 (1:00-3:40) |
| 5:00 | Roofs \& Bridges 828 Eng. Conference 702 | English Conference 704 | Roofs \& Bridges 828 <br> Mach. Design 818 |

## FIRST SEMESTER

1916-1917

| $$ | $\begin{aligned} & \text { FRIDAX } \\ & \begin{array}{l} \text { French } 717 \\ \text { Math. } 731 \\ \text { Steam Eng'r'g } 825 \end{array} \end{aligned}$ | SATURDAY <br> French 717 <br> Math. 731 <br> Steam Eng'r'g 825 |
| :---: | :---: | :---: |
| $\begin{aligned} & \text { German 715 } \\ & \text { French } 719 \\ & \text { Math. } 727 \\ & \text { App. Mech. } 815 \end{aligned}$ | German 715 <br> French 719 <br> Math. 725 <br> App. Mech. 815 | German 715 French 719 Math. 727 <br> App. Mech. 815 |
| $9: 20 \begin{aligned} & \text { Chemistry } 741 \\ & \text { Physics } 781 \end{aligned}$ | Assembly | $\begin{aligned} & \text { Chemistry } 741 \\ & \text { Physics } 781 \end{aligned}$ |
| 10:15 Chem. Lab. ${ }^{741}$ | Chem, Lab. 741 Physics Lab. 783 | Chem. Lab. 741 <br> Physics Lab. 783 |
| Chem. Lab. 741 <br> 11:10 Physics Lab. 783 Roofs \& Bridges 827 Mechanism 819 | Chem. Lab. 741 <br> Physics Lab. 783 <br> English Lit. 711 | Chem. Lab. 741 <br> Physics Lab. 783 <br> Roofs \& Bridges 827 <br> Mechanism 819 |
| $\begin{aligned} & \text { 1:00 Graphic Statics } 813 \\ & \text { to } \\ & 5: 00 \text { Graph. of Mech. } 823 \end{aligned}$ | AFTERNOON <br> Mech. Drawing 811 (1:00-3:40) <br> Graph. of Mech. 823 |  |

## SECOND SEMESTER

1916-1917

| 7:30 | THURSDAY <br> French 718 <br> Math. 732 <br> Steam Eng'r'g 826 <br> Roofs \& Bridges 828 | FRIDAY French 718 Math. 732 , Steam Eng'r 826 Roofs \& Bridges 828 | SATURDAY <br> French 718 <br> Math. 732 <br> Steam Eng'r'g 826 <br> Roofs \& Bridges 828 |
| :---: | :---: | :---: | :---: |
| 8:25 | German 716 <br> French 720 <br> Math. 728 <br> Strength of Mat. 816 | German 716 <br> French 720 <br> Math. 728 <br> Strength of Mat. 816 | German 716 <br> French 720 <br> Math. 728 <br> Strength of Mat. 816 |
| 9:20 | Chemistry 742 <br> Physics 782 | Assembly | Chemistry 742 <br> Physics 782 |
| 10:15 | Chem. Lab. 742 <br> Physics Lab. 784 | Chem. Lab. 742 Physics Lab. 784 | Chem. Lab. 742 <br> Physics Lab. 784 |
| 11:10 | Chem. Lab. 742 <br> Physics Lab. 784 <br> Hydraulics 820 | Chem. Lab. 742 <br> Physics Lab. 784 <br> English Lit. 712 | Chem. Lab. 742 <br> Physics Lab. 784 <br> Hydraulics $\mathbf{8 2 0}$ |
| $\begin{gathered} 1: 00 \\ \text { to } \\ 5: 00 \end{gathered}$ | Mech. Drawing 814 | AFTERNOON <br> Descrip. Geom. 812 ( $1: 00-3: 40$ ) <br> Mach. Design 818 <br> Roofs \& Bridges 828 |  |

## CURTIS SCHOOL OF HOME ECONOMICS

Director, Sarah E. Stimmel, B. S.

GENERAL INFORMATION
The Curtis School of Home Economics was established as a unit of the Municipal University in 1914. It occupies the building known as Curtis College, made possible by gifts from the late William Pitt Curtis of Wadsworth, Ohio, and from many citizens of Akron. Besides the necessary laboratories for work in Home Economics, the building is equipped with dining-room, kitchen and laundry.

## Admission

Candidates for unconditional admission must present at least 15 units of secondary school work. No student will be admitted with entrance conditions amounting to more than one unit. Such deficiency must be made up during the freshman year.

## Entrance Requirements

English ................................. 3 units
Mathematics ........................ $21 / 2$ units
Foreign Language* ................... 4 units
Physics .................................. 1 unit
Elective...................... . $41 / 2$ units
*Two units at least must be of one language. Not less than a full unit in the beginning of any language will be accepted toward this requirement.

## Course of Study

The course in Home Economics requires four years of regular university work and is planned to meet the practical needs of women students. It combines a thoro training in those branches of science essential to intelligent home
management with the broadest possible cultural education. Especial attention will be given to providing training for those who may wish to become teachers of the subject.

## OUTLINE OF REQUIRED STUDIES <br> First Year

First Semester. Term hrs. Second Semester. Term hrs.
Chemistry 351 or $353 . . . . .{ }^{4} 4$ Chemistry 352 or $354 . . . .$. . 4
English 51 ................... 3 English 52 ..................... 3
Modern Language ..... 3 or 4 Modern Language ..... 3 or 4
Designing 601 ............... 1 Textiles 604 ..................... 2
Textiles 603 .................. 2 Biology 402 .................... 4
Biology 401 ................... 4
Physical Training ........... 1
18 or $19 \quad 16$ or 17

| Second Year |  |
| :---: | :---: |
| Organic Chemistry 621..... 3 | Organic Chemistry 622..... 3 |
| Physiology 409 ............ 4 | Physiology 410 ............ 4 |
| Foods 605 ................. 4 | Foods $606 . . . . . . . . . . . . . . . . .4$ |
| Modern Language ......... 3 | Modern Language ......... 3 |
| Mechanical Drawing 625...11/2 | House Planning 626.......11/2 |
| 151/2 | 151/2 |

Third Year
Household Chemistry 623.. 3 Household Chemistry 624.. 3
Hist. Western Europe 275.. 3 Hist. Western Europe 276.. 3
Bacteriology 627 ............. 2 Bacteriology 628 ............ 2

Dress 609 .................... 2 Art 608 ......................... 2

15 16

Fourth Year
Dietetics 613 ................ 4 Seminar 618 ................... 2
Economics 251 .................. 3 Sociology $252 \ldots . .$.
The House 615 .............. 3 The House 616............... 3 10
Elective studies must be chosen sufficient in number to complete a total of 128 term hours.

## Degrees

For the completion of the four-year course in Home Economics ( 128 term hours required for graduation) the degree of Bachelor of Science in Home Economics will be conferred. By means of a five-year combination course degrees may be gained from both the College of Liberal Arts and the School of Home Economics, but candidates for such combination course must announce their intention at the end of the junior year.

## Fees

The regular incidental and student activity fee of $\$ 10.00$ per semester will be charged to all students. The tuition in this school is free to all residents of Akron. The tuition for non-residents of Akron is $\$ 40.00$ per semester. A graduation fee of five dollars is charged all graduates.

## Laboratory Fees

Chemistry 351, 352, 353, 354, per semester........... $\$ 3.00$
Chemistry, all other courses, per semester........... . 4.00
Chemistry, deposit for breakage in all chemistry courses 5.00
The unused portion of this breakage deposit will be returned at the end of the semester.

Physiology 407, 408, per semester. .................... . 3.50
Bacteriology, 627, 628, per semester................. 4.00
Bacteriology, deposit for breakage................... 5.00
Foods, per semester. ................................... 7.50
Dietetics, per semester................................ 7.50
NOTE:-Students provide their own materials in the following courses: Designing, Textiles, Mechanical Drawing and House Planning, Art, Dress, and Seminar.

## SUBJECTS OF INSTRUCTION

All courses numbered over 600 are offered primarily only for students in the school of Home Economics and may be elected by students in the college of Liberal Arts only under the restrictions imposed by that College. For description of courses mentioned only by number, see pages 49-89 of general catalog.

## ENGLISH

Courses: 51, 52, 65, 66.
GERMAN
Students who have had no German will enter 101; those with one year of German are advised to do the same. Students with two years of German will enter 103 -with three or four years, 131. Courses: 101, 102, 103, 104, 105, 106, 131, 132.

FRENCH
Courses: 151, 152, 153, 154.
ECONOMICS AND SOCIOLOGY
Courses: 251, 252.
HISTORY
Courses: 275, 276.
CHEMISTRY
Courses: 351, 352, 353, 354.
621. Organic Chemistry.-(First Half-Year.)

Five hours per week. Tu. and Th., $11: 10 ; \mathrm{Tu} ., 3: 00-$ 5:00. (Three term hours.)
The course is designed to give a thoro knowledge of the principal classes of organic compounds and their most important derivatives. The laboratory practice consists of the preparation of typical compounds.

Prerequisite-One year of general chemistry.

Continuation of 621.
623. Household Chemistry.-(First Semester.)

Six hours per week. Th., 8:25; Tu., 1:00-3:00; Th., 3:00-5:00. (Three term hours.)
This course includes the chemistry of foods and testing for adulterations; also the chemistry of cooking and cleaning. This course is open to students who have completed Course 622.
624. Household Chemistry.-(Second Semester.)

Continuation of 623 .

## BIOLOGY

Courses: 401, 402, 409, 410.

## BACTERIOLOGY

assistant-professor hardgrove.
627. Bacteriology.-(First Semester.)

Tu., 10:15-12:00; W., 1:00-4:00. (Two term hours.)
An elementary course in Bacteriology consisting of lecture and laboratory work, designed particularly for third year Home Economics students. Others will be admitted only on permission of instructor.
(In case of lecture Tuesday, period will be $10: 15$ to 11:10.)
628. Bacteriology.-(Second Semester.)

Continuation of $62 \%$.
MECHANICAL DRAWING
mr. boenisch.
625. Mechanical Drawing.-(First Semester.)
M., 1:00-4:00. (One and one-half term hours.)
626. House Planning.-(Second Semester.)
M., 1:00-4:00. (One and one-half term hours.)

Prerequisite, Mechanical Drawing 625.

## DESIGNING AND ART

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MR. BOENISCH.
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601. Designing.-(First Semester.)

Th., 1:00-3:00. (One term hour.)
To develop a taste for harmony in color, line and space. Work done in pencil, pen, charcoal and water color.
607. Art.-(First Semester.)

Tu., $3: 00-5: 00$; F., $1: 00-3: 00$. (Two term hours.)
Prerequisite, Designing. A continuation of Designing with advanced problems in color and line.
608. Art.-(Second Semester.)

Tu., 3:00-5:00; F., 1:00-3:00. (Two term hours.)
Continuation of $60 \%$.

## HOME ECONOMICS

## miss stimmel.

603. Textiles.-(First Semester.)

Lecture, M., y:30; Laboratory, Th., 3:00-5:00. (Two term hours.)
Concurrent, Designing. A study of fibres and fabrics.
Laboratory work includes the proper selection of materials, the making of suitable designs, the making of wearing apparel, the judging of cloth and the comparison of laboratory and commercially prepared garments.
604. Textiles.-(Second Semester.)

Continuation of 603.
605. Foods.-(First Semester.)

Lecture hours, Tu., Th., $10: 15$; Laboratory, W., F., 1:00-3:00. (Four term hours.)

Prerequisite, Chemistry 351-2 or 353-4. The selection and preparation of foods. Their ordinary occurrence ; their nutritive values and their comparative costs. The laboratory work, the basis for certain methods of food preparation, is correlated with the lecture work.
606. Foods.-(Second Semester.)

Continuation of 605.
609. Dress.-(First Semester.)
M., $1: 00-3: 00$; W., $11: 10$. (Two term hours.)

Prerequisite, Textiles 603-4; concurrent, Art 607. The making of a simple unlined dress. Modification of pattern; selection and combination of suitable materials.
612. Sanitation.-(Second Semester.)
M., W., F., $11: 10$. (Three term hours.)

Prerequisite or concurrent, Bacteriology. Principles underlying the situation, construction, sanitation, ventilation, heating and plumbing of the house. First aid to the injured and home nursing. Personal hygiene.
613. Dietetics.-(First Semester.)
M., F., 11:10. Laboratory, Tu., Th., 1:00-3:00.
(Four term hours.)
Prerequisites, Foods, 605-6. Physiology 407-8, Household Chemistry $623-4$. A study of the chemical, physical and physiological value of the nutrients. Dietary standards, infant and invalid cookery.
615. The House.-(First Semester.)
M., W., F., 10:15. (Three term hours.)

Prerequisite, Art 607, Economics 251, Home Economics 605-6, Home Economics 603-4. The care and management of the home in relation to its purpose and its arrangement and decoration from a practical and attractive standpoint.
616. The House.-(Second Semester.)

A continuation of 615.
618. Seminar.-(Second Semester.)

Open only to seniors.

## PHYSICAL TRAINING

The regular work in physical training for women will begin the first of December and will continue for three months. Freshman students in Home Economics are also required to attend a course of lectures on hygiene given by Dr. Plowman. One term hour credit will be given for the completion of both of the above courses.

## SCHEDULE FOR FIRST SEMESTER

1915-1916

| $7: 30$ | MONDAY French 153 Textiles 603 | TUESDAY <br> German 105 | WEDNESDAY <br> French 153 |
| :---: | :---: | :---: | :---: |
| $8: 25$ | German 103a <br> Hist. West. Europe 275 | Invert. Zool. 401 | German 103a <br> Hist. West. Europe 275 |
| $9: 20$ | Rhet. 51 a\&b <br> German 101a <br> Schiller 115 <br> French 151a <br> Economics 251 <br> Physiology 407 <br> Chemistry 351a | Assembly | Rhet. 51 a\&b <br> German 101a <br> Schiller 115 <br> French 151a <br> Economics 251 <br> Physiology 407 <br> Chemistry 351a |
| 10:15 | Rhet. 51 c\&d <br> English 65 <br> German 131 <br> French 151b <br> House 615 | Bacteriology 627 <br> Chem. 353 <br> Foods 605 | Rhet. 51 c\&d <br> English 65 <br> German 131 <br> French 151b <br> House 615 |
| 11:10 | German 101b <br> German 103b <br> Dietetics 613 | Chem. 351b Org. Chem. 621 Bacteriology 627 | German 101b German 103b <br> Dress 609 |
| $\begin{gathered} 1: 00 \\ \text { to } \\ 3: 00 \end{gathered}$ | Fresh. Chem. 351a <br> Dress 609 <br> Mech. Draw. 625 | AFTERNOON <br> Fresh. Chem. 353 <br> Invert. Zool. 401 Chemistry 623 <br> Dietetics 613 | Fresh. Chem. 353 <br> Foods 605 <br> Bacteriology 627 |
| $\begin{aligned} & 3: 00 \\ & \text { to } \\ & 5: 00 \end{aligned}$ | Fresh. Chem. 381b <br> Mech. Draw. 625 <br> (till 4 o'clock) | Art 607 <br> Chemistry 621 | Bacteriology 627 (till 4 o'clock) |

## SCHEDULE FOR FIRST SEMESTER

1915-1916


| $\begin{aligned} 10: 15 & \\ & \text { Chem. } 353 \\ & \text { Foods } 605 \end{aligned}$ | Rhet. 51 c\&d <br> English 65 <br> German 131 <br> French 151b French 151b <br> House 615 |
| :---: | :---: |
| 11:10 Chem. 351b Org. Chem. 821 | German 101b German 103b Dietetics 613 |
| $\begin{array}{cl} 1: 00 & \text { Invert. Zool. } 401 \\ \text { to } \\ \text { 3:00 } & \text { Designing } 601 \\ & \text { Dietetics } 613 \end{array}$ | AFTERNOON <br> Fresh. Chem 351a <br> Foods 605 <br> Art 607 |
| $\begin{array}{ll} \text { 3:00 } \\ \text { to } & \text { Textiles } 603 \\ \text { 5:00 } & \text { Chemistry } 623 \end{array}$ | Fresh. Chem. 351b |

## SCHEDULE FOR SECOND SEMESTER

1915-1916


## SCHEDULE FOR SECOND SEMESTER

1915-1916
thursday friday saturday

## 7:30 German 106

| 8:25 | Botany 414 | German 104a |  |
| :---: | :---: | :---: | :---: |
|  |  | Hist. W. Eur. 278 |  |
|  | Chemistry 624 |  |  |
| 9:20 | Rhetoric 52a\&b |  |  |  |
|  | German 102a Schiller 116 |  | German 102a |
|  | French 152a | Assembly | French 152a |
|  | Sociology 252 |  |  |
|  | Physiology 408 |  |  |



## LATE AFTERNOON AND EVENING COURSES

In response to numerous inquiries the University offers during the winter (1915-1916) a number of courses in the late afternoon and evening for the especial benefit of teachers, employed persons and citizens in general who may wish to enter the work. The courses will be of college grade and college credit will be given to those who successfully complete the requirements. Only such courses as are elected by five or more persons will be offered.
By arrangement with the superintendent of schools, courses have been planned with especial view to avoidance of conflict in time with the Tuesday meetings of teachers in the city school system. The superintendent will cooperate with the University in avoiding conflicts on other days.

## Admission

These courses are open:

1. To all persons over 21 years of age.
2. To those under 21 years who have completed the course of a first grade high school.
Those working for an eventual college degree must complete the regular college entrance requirements before they can be considered candidates for a degree.

## Registration

Registration will take place from 4:00 to 5:30 on the following days: Thursday and Friday, December 16 and 17, 1915.

Class work will begin on Monday, January 3, and will close on Friday, May 12, 1916.

## Credit

College credit will be given on the basis of one credit hour for the successful completion of a one-hour per week course for one term.
Fee

To residents of Akron (including teachers employed in the city schools) and for all teachers employed in the schools of Summit County a fee of $\$ 3.00$ will be charged for one or two hours per week for the term of eighteen weeks, and a fee of $\$ 5.00$ for three or four hours per week for the term.

To others (non-residents of Akron) the fee will be $\$ 8.00$ for one or two hours per week and $\$ 15.00$ for three or four hours per week for the term.

## COURSES FOR 1915-1916

All classes, except as otherwise noted, are held from 5:00 to 6:00 P. M. (January 3 to May 12, 1916).

## ROMANCE LANGUAGES

Beginning French. Grammar, reading, simple conversation. Wednesday and Friday (two credit hours).

Beginning Spanish. Given with especial view toward preparation for commercial needs. Tuesday and Friday, $7: 00 \mathrm{P} . \mathrm{M}$.

Advanced Spanish. Given for those with previous training in the subject. Tuesday and Friday, 8:00 P. M.

## ENGLISH LITERATURE

Tennyson and Browning. The time will be equally divided between these two greatest Victorian poets. Owing to the brevity of the course, only their most significant work will be studied. Thursday (one credit hour).

## PSYCHOLOGY

Applied Psychology. Monday (one credit hour).

## EXPRESSION

Voice Work, Expression and Dramatic Work. Monday and Thursday (two credit hours).

## CHEMISTRY

General Chemistry. A general introduction to the subject of Chemistry. Lectures and laboratory work. Wednesday and Thursday at 7:30 P. M. (two credit hours).

MATHEMATICS AND ENGINEERING
Plane Trigonometry. Work includes goniometry, trigonometric functions of an angle in any quadrant, solution of plane and oblique triangles, trigonometric equations. Monday and Friday (two credit hours).

Elementary Strength of Materials. Design of beams.
Knowledge of Algebra and Trigonometry not necessary.
Tuesday. 7:30 P. M. (no credit).

## BIOLOGY

Biological Problems. A course of fifteen lectures, covering the more prominent subjects in the field of General Biology, such as Organic Evolution, Heredity, Environment, Eugenics, Animal and Plant Breeding, Sanitation and the Public Health, etc. These lectures will be copiously illustrated by means of lantern slides. The purpose of the course is to present in a concise, yet comprehensive, nontechnical manner, the great outstanding facts and doctrines of Biology, to the end that some popular misapprehensions may be corrected, and that a more sympathetic and intelligent interest in this field of Natural Science may be cultivated. Monday (one credit hour).

## HOME ECONOMICS

Foods. A brief study of the occurrence, the nutritive values, and the comparative costs of the preparation of foods. Lectures, recitations and text book. Wednesday (one credit hour).

## SCHEDULE OF CLASSES

At 5:00 P. M. except as otherwise noted.

## Monday

Applied Psychology
Expression
Biological Problems
Trigonometry $7: 30 \mathrm{P} . \mathrm{M}$.

## Tuesday

Elementary Strength of Materials $7: 30 \mathrm{P}$. M.
Beginning Spanish 7:00 P. M.
Advanced Spanish 8:00 P. M.

> Wednesday

Beginning French
Chemistry 7:30 P. M.
Thursday
Tennyson and Browning
Expression
Chemistry 7:30 P. M.

## Friday

Beginning French
Plane Trigonometry 7:30 P. M.
Beginning Spanish 7:00 P. M.
Advanced Spanish 8:00 P. M.

## COMBINATION COURSES

## I. AT THE UNIVERSITY OF AKRON

The Arts-Home Economics Combination Course
A combination may be made between the Arts and Home Economics Courses by which degrees may be obtained from both schools in a minimum period of five years. This may best be accomplished by spending four years in the Curtis School of Home Economics and an additional year in the College of Liberal Arts. If such combination course be desired the elective work in the fourth year must be shaped toward the fulfillment of the major and minor requirements in the College of Liberal Arts.

An arrangement is also possible by which the student may spend three years in the College of Liberal Arts and two years in the Curtis School of Home Economics, receiving both degrees. Those planning this combination should consult the Classification Committee at the beginning of the sophomore year in order that the subjects to be taken may be definitely determined, according to the major subject chosen.
2. WITH THE OHIO STATE UNIVERSITY

By special arrangement concluded with the Ohio State University, the University of Akron is enabled to offer combination courses in its own College of Liberal Arts with certain professional schools of the State University. By means of such a course, the student is enabled to shorten by one year the six to eight year period otherwise necessary for the acquirement of both college and professional degrees and training. Generally speaking, the plan contemplates an attendance of three years at the University of Akron with an additional two or three years (depending on the subject chosen) at the State University. During the fourth year of his course (i. e., the first year at the State University) the
student is counted as a senior in absentia by the University of Akron and at the end of this year returns to receive his Bachelor's degree with his class.

The following combinations have been arranged:
THE ARTS-LAW COMBINATION COURSE
This course comprises a total of six years, three years at the Municipal University of Akron and three years at the Law School of the Ohio State University. At the end of four years the degree of Bachelor of Arts or Bachelor of Philosophy is conferred by the University of Akron for the satisfactory completion of 128 term hours of work. At the end of six years the student may become a candidate for the degree of Bachelor of Laws at the Ohio State University.

## Requirements in Buchtel College of Liberal Arts

1. No student is eligible for the combined Arts-Law Course who has not been a resident student at the University of Akron for at least three years and who has not gained at least 96 term hours credit in Buchtel College. In order to receive the Bachelor's Degree from the University of Akron at the end of the fourth year, the student must complete 101 term hours of work in Buchtel College before entering the Ohio State University.
2. No student shall be eligible for a degree from Buchtel College of the University of Akron in the combined ArtsLaw Course who has not received sufficient credit at the State University to complete a total of 128 term hours of work.
3. A major must be chosen in Buchtel College of Liberal Arts in a course leading to the degree of Bachelor of Arts or Bachelor of Philosophy.
4. All of the major and minor requirements in the course chosen must be completed at the University of Akron.
5. The Faculty of Buchtel College reserve the right to refuse to recommend for the combined course any candidate who has, in their opinion, not maintained a standard of good scholarship.

## THE ARTS-AGRICULTURE COMBINATION COURSE

Total time required, five years, three of which are to be spent at the University of Akron and two at the Ohio State University. At the end of four years' time, the degree of Bachelor of Science will be conferred by the University of Akron and at the end of five years the degree of Bachelor of Science in Agriculture by the Ohio State University. General Requirements in Buchtel College of Liberal Arts

1. No student is eligible for the Combined Arts-Agriculture Course who has not been a resident student at the University of Akron for at least three years and who has not gained at least 96 term hours credit in Buchtel College.
2. No student shall be eligible for a degree from Buchtel College of the University of Akron in the combined Arts-Agriculture course who has not received sufficient credit at the Ohio State University to complete a total of 128 term hours of work.
3. The Faculty of Buchtel College reserve the right to refuse to recommend for the combined course any candidate who has, in their opinion, not maintained a standard of good scholarship.

## Combination Arts-Agriculture Course

Three years at the University of Akron

> First Year

First Semester

| English sı1 ................ 3 | English $52 . . . . . . . . . . . . . . . . .3$ |
| :---: | :---: |
| Mod. Lang. . . . . . . . . . . . . . 4 | Mod. Lang. ....... . . . . . . . 4 |
| Chem. 351 or $353 \ldots . . . . .4$ | Chem. 353 or 354......... 4 |
| Hygiene .................. 1 | Current Events ............ 1 |
| Mathematics $301 . . . . . . . . . .4$ | Mathematics 302 |
| 16 | 16 |

Second Year
First Semester Second Semester

| English 53 ................ 2 | English 54 |
| :---: | :---: |
| Biology 401 ............... 4 | Biology 402 |
| Mod. Lang. . ......... 3 or 4 | Mod. Lang. . . . . . . . . 3 or |
| History 275 or $277 . . . . . . . .$. . 3 | History 276 or 278. |
| Chem. 365 ................. 3 | Chem. 366 |
| 15 or 16 | 15 or 16 |

## Third Year

| First Semester | Second Semester |
| :---: | :---: |
| Polit. Economy 251....... 3 | Sociology 252 ............. 3 |
| Physics 341 .............. 4 | Physics 342 ................ 4 |
| Vascular Plants 405........ 4 | Embryology 404 .......... 4 |
| Geology 323 .............. 3 | Astronomy $320 . . . . . . . . . . .3$ |
| $\overline{14}$ | 14 |

In addition enough elective work to complete at least 96 hours.

## Two years at the Ohio State University

Fourth Year
Animal Husbandry ........ 4
Agricultural Chemistry $\ldots . .4$
Rural Economics........ 4
Agricultural Engin. $\} \ldots . .4$
Farm Crops
Choice of any two of these
the fourth year. The remain-
ing two the fifth year.

In addition to the two selected, at least ten hours to be elected with approval of the Adviser.

> Fifth Year

Two subjects of four requircd in senior year- 8 hours.
Ten hours a week thrnout the year, from any of the courses related to the previons year's work in the College of Agriculture.

## 3. WITH WESTERN RESERVE MEDICAL SCHOOL*

By arrangement concluded on February 2,1914 , a combination course has been established between the University of Akron and Western Reserve Medical School.
The completion of this course requires seven years, the first three of which are to be spent at the University of Akron and the last four at Western Reserve University. At the end of four years, the degree of Bachelor of Science will be conferred by the University of Akron and at the end of seven years, the degree of Doctor of Medicine will be given by Western Reserve University.

## General Requirements in Buchtel College of Liberal Arts

1. No student is eligible for the Combined Arts-Medicine Course who has not been a resident student at the University of Akron for at least three years and who has not gained at least 96 term hours credit in Buchtel College.
2. No student shall be eligible for a degree from Buchtel College of Liberal Arts in the combined Arts-Medicine Course who has not received sufficient credit at the Western Reserve University to complete a total of 128 term hours of work.
3. The Faculty of Buchtel College reserve the right to refuse to recommend for the combined course any candidate who has, in their opinion, not maintained a standard of good scholarship.

## Subject Requirements in Buchtel College of Liberal Arts

1. A major must be chosen in Buchtel College leading to the degree of Bachelor of Science.
2. All of the major and minor requirements in the course chosen must be completed at the University of Akron.
*This course is here detailed as typical of a combination possibie with the large majority of medical schools.
(The following are requirements of subjects to be taken at Buchtel necessary for entrance to the Medical School.)
(A) Chemistry: The equivalent of at least one year of collegiate work of a value of not less than 8 term hours, of which at least 4 term hours shall be laboratory work, and the total instruction shall be not less than 192 hours.
(B) Physics: The equivalent of at least one year of collegiate work of a value of not less than 8 term hours, of which at least 4 term hours shall be laboratory, and the total instruction shall be not less than 192 hours.
(If one year of high school physics has been presented for college entrance, then one-half of the above college physics will fulfill the requirements. This provision expires with class entering Medical College in 1916. The class entering in 1917 must present one year of college physics.)
(C) Biology; Zoology and Botany: The equivalent of at least one year of collegiate work of a value of not less than 8 term hours, of which at least 4 shall be laboratory work, and the total instruction shall be not less than 192 hours.
(D) German or French: A total of not less than 9 term hours, all in one of these subjects. One unit of high school work may be counted as 3 term hours of this requirement, but at least 6 term hours shall be collegiate work.

All of the requirements indicated above may be fulfilled in a space of three years. The following plan is suggested:

First Year: Regular Freshman Scientific Course.
Second Year: Zoology and Botany, 8 hours, Physics with Lab., 12 hours, German or French sufficient to make with freshman work a total of at least 9 term hours.
(This completes the requirements made by the Medical School. The remainder of time should be given to the completion of the major and minor requirements of Buchtel College.)
4. COMBINATION COURSES WITH OTHER SCHOOLS

## With Medical Schools

The University of Akron will enter into combination courses with any of the Medical Schools in the A Plus class, as fixed by the standards of the American Medical Association. These schools are: Leland Stanford, University of California, Yale, Northwestern University, Rush, Indiana University, University of Iowa, Tulane, Johns Hopkins,* Harvard, University of Michigan, University of Minnesota, Washington University, University of Nebraska, Columbia, Cornell, University and Bellevue Hospital Medical College of New York, Syracuse University, University of Cincinnati, Ohio State University, Reserve, Jefferson Medical College, University of Pennsylvania, University of Pittsburgh, Vanderbilt University, University of Texas, University of Virginia.

## With Other Professional and with Technical Schools

The University of Akron is willing to give the opportunity for combination courses with any graduate or professional school of the first class. In making such combinations, the University of Akron will insist on the fulfillment of the general requirements of three years' residence at Akron, the completion of 96 term hours there and of a total of 128 term hours for graduation-also of the completion of all required majors and minors.

While the University of Akron maintains a College of Engineering with five year courses on the co-operative plan (Cincinnati plan), yet the College of Liberal Arts will gladly offer opportunity to students who desire to enter upon a combination course with regular four year technical schools. Such a course usually requires five years'
*Johns Hopkins requires a college degree for entrance.
time, three years at the University of Akron and two years at the technical school. In these combination courses, however, the degree of the University of Akron is not given until the end of the fifth year.

Students are warned against haphazard work in Buchtel College of Liberal Arts with the vague idea that a course chosen at random can be combined with any professional school to which their inclination may later direct them. The choice of school with which the combination is desired should never be delayed beyond the close of the freshman year. The committee on Classification is at all times ready to be of assistance to students in making combinations with reputable professional and technical schools.

## TRAINING COURSE FOR TEACHERS

In harmony with action taken in December, 1915, by the Board of Education of the City of Akron and the Board of Directors of the Municipal University of Akron, the University and the Perkins Normal School undertake jointly the academic and professional preparation of teachers in accordance with the following regulations:

## FOUR YEAR COMBINATION COURSE

Graduates of this course will be accepted as Elementary School Teachers but not as High School Teachers in the Akron schools. They are, however, entitled to a provisional state high school certificate, giving them the legal right to teach in any high school in the state of Ohio.

Students who have completed three years of work (103 hours) in a satisfactory manner, at the University shall be allowed to enter the Perkins Normal School with the prospect of completing the course there in one year.

Such students shall elect at the University adequate courses in United States History and Government, Sociology, Psychology and Ethics.

During the three years at the University the student shall complete a minimum of 103 term hours of work. On satisfactory completion of the fourth year's work at the Perkins Normal School the degree of Bachelor of Science in Education will be given by the University.

## FIVE YEAR COMBINATION COURSE

A five year combination course will be offered for those desiring to become high school teachers in the Akron School system. The conditions are as follows:

The candidate for the combination five-year course shall spend the first four years at the University. During this period the election of a maximum of ten semester hours at
the Perkins Normal School shall be allowed and these hours shall be credited toward the college degree.
The student shall pursue as a major in the college course that subject in which he wishes to qualify as a High School teacher.

On the successful completion of four years' work (128 credit hours) at the University, the student shall receive the college degree to which he is entitled by the nature of his major subject.
The fifth year shall be spent at the Perkins Normal School and in observation and practice teaching, but only those students will be eligible for the combination course who have given evidence of high scholarship and have been duly recommended on this basis by the major professor and accepted by the Superintendent of Schools and the Principal of the Perkins Normal School.
On the successful completion of the fifth year's work the Perkins Normal School will grant a Teacher's Diploma in Elementary or Secondary Education.
Graduates of this course are eligible to appointment to high school positions in Akron after a reasonable probationary period in elementary school work.

## CIVIC CO-OPERATION

The work in civic co-operation has been undertaken for the purpose of bringing the University in all its departments into close touch with the activities of the city of Akron. The Directors of the University feel that an institution of higher learning, supported in large part by municipal taxation, should give freely to the city all possible practical aid by means of its instructors and equipment. This help is meant to supplement and guide the work of such city departments (or even private enterprises) as may find expert or technical advice of value in conducting their activities.

While the work of civic co-operation is not primarily organized for the purpose of teaching, yet one of its main objects will be to bring students into contact with the work of the city and to train them along various lines of practical usefulness to the community. Whenever possible, the actual problems of civic life and administration will be substituted in the various courses for purely theoretical work, since the University considers this training as one of the most important branches of its activity.

DIVISIONS OF CO-OPERATIVE WORK
The work properly falls under two heads.
I. Special organizations or Bureaus.
II. Co-operative work by various departments of the University.
I. SPECIAL ORGANIZATIONS

The Bureau of City Tests
A. E. HARDGROVE, B. S., DIRECTOR.

In accordance with a proposal made by the Directors of the University and accepted by the Akron City Council, the University has assumed entire charge of the testing work
of the city. This work covers chemical and physical tests for various city departments and bacteriological tests for the Board of Health and the Water Department.

The Bureau is located in the Knight Chemical Laboratory and will co-operate with the Department of Chemistry in bringing students in advanced courses in chemistry into touch with city work by giving them the actual problems of the city for solution as a part of their regular class work. The Bureau also offers a course in bacteriology in the School of Home Economics.

The Bureau of City Tests during the year and a half since its organization has rendered the following services to the City of Akron :
-made 906 diagnoses for diphtheria.
-made 81 miscellaneous bacteriological examinations.
-made 125 food examinations.
-made 225 spring and well examinations, of which sources about 60 per cent. have been condemned as dangerous to health.
-made 38 brick tests condemning brick used on the streets.
-made 130 examinations of miscellaneous supplies of purchase and construction.
--examined 177 carloads of cement, excluding the product of one factory, and condemning several miscellaneous carloads.
-investigated 16 cases of poisoning.
-assisted in consultation concerning legislation.
-furnished professional advice to different city departments on miscellaneous questions.
-had charge of the disinfection of the city water supply for one year.
-is now making a daily analysis of city water.

## II. CO-OPERATIVE WORK BY DEPARTMENTS OF THE UNIVERSITY

Under the joint direction of the Head of the Department of Social Sciences and the Director of City Charities, work has been carried out by University students in investigating housing conditions in Akron's congested districts. Such
work is counted as laboratory practice in certain courses offered by the above department. The results are tabulated by the card system and submitted to the Board of Health, which has suggested that a complete survey of the city be made in this manner. The Board of Health has found the information thus gained to be of practical value in directing the work of its inspectors and of the Building Inspection Department and has added to the value of student workers by conferring on them the powers of sanitary inspectors.
A number of students in Political Science have done field work under the direction of the University and the Bureau of Municipal Research in the various city departments. It is felt that this means of training for public service is capable of wide extension.
During the past year practical co-operative work was carried on by students, under the clirection of the University in Boys' Club work and the teaching of foreigners. Certain research problems are also being undertaken for the United States Department of Labor.
At the request of the Akron City Council the College of Engineering has undertaken an examination of the city paving system and has issued a report on the subject (Akron Pavements, 74 pp. Fred E. Ayer, Dean of the College of Engineering). The work embraces reports on the present condition, cost and durability of the pavements of the City of Akron; the advisability of adopting the direct method of pavement construction ; the cost and adaptability to various classes of traffic of the different pavement types now in general use.
The College of Engineering is also carrying on its cooperative system of training engineers in many of the factories of the city.

## EXTENSION LECTURES

During the winter seasons of 1914-1915 and 1915-1916 the University has offered to citizens the opportunity of hear-
ing certain talks and lectures by members of the faculty. A course of four lectures was offered in 1914-1915 and a course of six lectures in 1915-1916. These were given free of charge before any responsible organization of citizens of Akron who desired to receive them with the provision that no admission fee be charged. The lectures for the season 1914-1915 were as follows:

## One Trend of Modern Education

A brief review of modern education methods, showing the tendency of these methods to require students to do things.

Dean F. E. Ayer.
A Greek Temple from the Quarry to the Pediment
Illustrated with slides. Professor J. C. Rockwell.
Some Scientific Problems of the City
A discussion of the chemical and bacteriological problems which confront a city.

Assistant Professor A. E. Hardgrove. director of bureau of city tests.

## Bondage or Freedom

A discussion of the philosophy of action, showing our bondage to superstition, habit, fashion, tradition, etc. Professor O. E. Olin.

For the season 1915-19I6 the course of the previous year has been amplified and consists of the following:
Problems of City Government

> Professor O. E. Olin.

One Trend of Modern Education
Dean F. E. Ayer.
Uses of a Testing Laboratory in a Municipality
Assistant Professor A. E. Hardgrove, director of bureau of city tests.

Reading in the Home
Dean A. I. Spanton. An Historical Subject
(To be chosen.)
Assistant Professor E. A. Thompson.
Either of the following may be chosen:
a. Whence and Whither-Heredity, Eugenics and Human Conservation.
b. Up from the Depths-The Evolution of Animal Forms.

Professor A. B. Plowman.
All requests for these lectures should be addressed to Dr. J. C. Rockwell, Chairman, University Lecture Committee, Municipal University, Akron.

LATE AFTERNOON AND EVENING CLASSES
Late afternoon and evening classes are offered for the winter of 1915-1916. Nearly every department of the University offers one or more hours weekly. These classes are given for full college credit and are intended particularly for teachers, employed persons and any other citizens who may be interested in them. For full details see page 124.
CO-OPERATION WITH BOARD OF EDUCATION
A combination course for the purpose of training teachers for the city school system has been arranged by agreement between the Board of Education and the Municipal University. For details see page 136.

## REGISTER OF STUDENTS

## BUCHTEL COLLEGE

## 1915-1916

Students whose names are starred are not in full class standing.
SENIOR CLASS


SENIORS IN COMBINATION COURSES
Cooper, Willian-Combined Arts-Normal course, with Kent Normal School. Akron.

SENIORS IN ABSENTIA
Palmer, Clarence-Combined Arts-Business Administration with Dartmouth College.
Sammarone, Salvan-Combined Arts-Medical with Western Reserve University.

Students in Combination Courses-3
Total Seniors-26
JUNIOR CLASS
Azar, Robert Isaiah . S Akron




FRESHMAN CLASS




SPECIAL STUDENTS


## COLLEGE OF ENGINEERING

SOPHOMORE CLASS
Bevington, Eldon ..................................................................
Boecker, Theodore J............................................Akron

| Boedicker, Earl | Akron |
| :---: | :---: |
| Cady, Emerson E | Akron |
| Converse, Lucius | Mantua |
| Grafton, John | Barberton |
| Gulick, Earl | Akron |
| Hilliard, Frank C | Wadsworth |
| Joel, Floyd E. | Ashland |
| Judy, Lowell | . Kent |
| Kennedy, John | Akron |
| Lichter, Jacob | Akron |
| Mitchell, Ernest | Akron |
| Moore, Harold | Akron |
| Purdy, Harold | Akron |
| Siedschlag, Karl | Akron |
| Turnbull, Thomas Reed | Pomeroy |
| Wybel, Howard | Akron |

## FRESHMAN CLASS

| Bordner, Robert | ron |
| :---: | :---: |
| Breen, Charles | Akron |
| Breen, Leo | Akron |
| Cable, John C | Akron |
| Donaldson, Glenn | hoga Falls |
| Gilbert, Ernest E | Wadsworth |
| Grimm, George | Akron |
| Hill, Lawrence | Barberton |
| Hilliard, Claude P | Wadsworth |
| Hoskin, Minard | Akron |
| Jenney, Charles | Barberton |
| Kuszmaul, Corliss | Akron |
| McGowen, William | Akron |
| Miller, John | Akron |
| Northrup, Donald | Akron |
| Pollock. Lloyd C | Akron |
| Pouchot, Harold | Akron |
| Quigley, Ray | Chardon |
| Rubright, Clare | Akron |
| Thierry, James | Akron |
| Vogt, Walter | Akron |
| Whalen, Charles | ron |

## SPECIAL STUDENTS

(Not candidates for degree.)

| Lamberty, Leo Carl. | Dennison |
| :---: | :---: |
| Soderland, Carl | Vorcester, Mass. |
| Wilgus, Ward | Special Students-3 |

## CURTIS SCHOOL OF HOME ECONOMICS

## SENIOR CLASS

| Proehl, Bessie 2 Willson, Irene |  | Akron Akron Seniors-2 |
| :---: | :---: | :---: |
|  | JUNIOR CLASS |  |
| *Burkmann, Anne ....................................... Akron |  |  |
|  |  |  |
|  |  |  |
| Mallory, Helen . . . . . . . . . . . . . . . . . . . . . . . . . . . Cuyahoga Falls |  |  |
| *Tobin, Honora |  |  |
| Tobin, Нопога |  | Juniors-5 |

SOPHOM ®R CLASS $^{\text {S }}$


## FRESHMAN CLASS


SPECIAL STUDENTS
(Not candidates for degree.)
Brunskill, Hazel $\qquad$

| Adam, Mrs. E. R Ayer, Bessie B. | Kennedy, Ruth E. |
| :---: | :---: |
| Balz, Emilie | Kolbe, Lydia V. |
| Bower, Rossa M. | Lamson, Mrs. G. R. |
| Brouse, E. W. | Lemmler, Hazel |
| Bush, A. J. | Livingston, Lena |
| Cadden, Chas. C. | McBride, Frederick L. |
| Cannon, Charles E. | McBride, Irene |
| Carnahan, Dana W. | McCloskie, Harriet |
| Chalfant, Anna B. | MacGregor, Mary F. |
| Cole, Hazel L. | McLatchy, M. Lelia |
| Copenhaver, Sue E. | MacLaren, Robert W |
| Cronan, Grace Mitchell | Mahoney, James |
| Curry, Frances N. | Markel, Verna |
| Dean, Mrs. Anna | Merzweiler, Leo A. |
| Dempsey, Helen B. | Michel, Lewis J. |
| Derrig, Dorothea | Miller, Margaret R. |
| Dickenson, Elizabeth | Murphy, William F. |
| Eager, Helen H. | Myers, Elmer F. |
| Eaton, Ida B. | Olin, Grace G. |
| Eberle, Clarence | Olin, S. Estella |
| English, James H. | O'Neill, Mary |
| Fassnacht, Milton E. | Parker, Anna F. |
| Farver, Bertha M. | Pease, Blanche Mae |
| Farver, Ethel | Piero, Mary Grace |
| Few, Flora | Piper, Bertha M. |
| Findley, Rena B. | Rannells, Edward |
| Foust, C. R. | Ranck, Sadie C. |
| Fuller, William A. | Redinger, Mary |
| Glock, Clementine | Rivkin, Rose |
| Grow, Mabel E. | Roderick, Owen M. |
| Gredys, Louis A. | Schworm, George |
| Guthrie, J. B. | Scott, William H. |
| Halsey, Ray | Seiberling, Willard P. |
| Hasford, C. J. | Seiberling, Irene H. |
| Hammer, Rose | Shanaman, Ray H. |
| Hausman, Carl | Shield, Vance |
| Hirlemann, Ruth | Simmons, Winifred |
| Hitchcock, Fred | Smith, Evelyn C. |
| Hogan, Mary | Smith, Florence M. |
| Holcomb, Albert W. | Smith, T. J. |
| Horvath, Samuel | Snapp, James B. |
| Hughes, Helen | Spicer, Marilla |
| Hull, Lois | Sprague, Stella |
| Jenness, Louise | Stewart, B. W. |
| Johnstoon, R. S. | Stubbs, George HI. |
| Keating, Mrs. F. C. | Sullivan, J. A. |
| Kendall, Nina F. | Sutliff, Marion B. |
| Kennedy, C. Blanche | Valsing, Anna |
| Kennedy, Dorothy | Vandersall, Clara E. |



## SUMMARY

Buchtel College

|  | Men | Women | Total |
| :---: | :---: | :---: | :---: |
| Senior Class | 17 | 9 | 26 |
| Junior Class | 27 | 11 | 38 |
| Sophomore Class | 30 | 12 | 42 |
| Freshman Class | 62 | 28 | 90 |
| Specials (entrance requirements completed) |  | 11 |  |
| Specials (entrance requirements not completed) | 6 | 3 |  |
| Total Specials ..................... |  |  | 20 |
| Total Men |  |  | 143 |
| Total Women |  |  | 73 |
| Total Students in Buchtel College |  |  | 216 |

## College of Engineering

Sophomores ................................................................... 18

Total Students in College of Engineeering .................. 43

Curtis School of Home Economics

| Seniors | 2 |
| :---: | :---: |
| Juniors | 5 |
| Sophomores | 7 |
| Freshmen |  |
| Specials (not candidates for degree) | 1 |
| Total Students in Curtis School | 24 |



## DEGREES CONFERRED

## CLASS OF 1915

Bachelor of Philosophy

| Eleanor Margaret Bowman | Akron |
| :---: | :---: |
| Ina Fleming | Akron |
| Effie Murphy | Akron |
| *Joseph Thomas | Akron |
| Pauline Weaver | Wadsworth |
| Bache |  |
| Grorge Bruner | Akron |
| $\dagger$ Sidney Conger | Akron |
| Leora Isabelle Dowell | Warwick |
| Harold Ellis | Canton |
| Will W. Foltz | Akron |
| lloyd Hanna | Akron |
| Harry Hillman | Akron |
| Clinton Limbert | Akron |
| George Moutes | Wadsworth |
| Arthur Lee Phelps | Cleveland |
| Arthur Ranney | Akron |
| Donald Ross | Akron |
| Elmer L. Spencer | Akron |

Raymond S. Taylor........................................................ Akron $\ddagger$ Sprague Tomlinson ............................................ Perry, N. Y.

* In combined Arts-Law course with the Ohio State University.
$\dagger$ In combined Arts-Medical course with Cornell University.
$\ddagger$ In combined Arts-Engineering course with the University of Pennsylvania.


## PUBLIC ADDRESSES

The following delivered talks or addresses under the auspices of the University during the year 1915:
Rev. F. B. Bishop, Supt. of Universalist Churches of Ohio.
Eugene Ransom, '90, Founder's Day Address.
Paul Motz, President Western Reserve University Student
Council and Ohio State Student Government Association-"Student Self Government."
Hon. Freeman T. Eagleson, Associate in the office of the Attorney
General of Ohio-"The Ohio Legislature."
Rev. S. B. Salmon, Pastor of the First Methodist Episcopal Church of Akron.
Ralph D. Upson, Winner of Gordon Bennett Cup for ballooning -"Aeronautics in the War."
President J. E. McGilvrey, Kent State Normal School-"Education."
Hamilton Holt, Editor of the "Independent"-"International Peace."
Professor L. S. Hopkins, Kent State Normal School-"Obedience." Rear-Admiral Robert E. Peary-"The North Pole" (Commencement Address).
Elias Day, Characterist (before the Alumni Association).
Dean A. I. Spanton-Baccalaureate Address.
J. P., Leotsakos, University of Athens-"Athens and the Olympic Games."
F. L. Olson, Director of Akron Bureau of Municipal Research"The Work of a Municipal Research Bureau."
D. W. Kaufman, President Ohio Real Estate Board.

Mulford Wade-"Investments."
S. F. Ziliox, President Commercial Printing Company.

Professor J. Cameron McLean-"Celtic Folk Songs."
J. A. Braden, Northern Ohio Traction and Light Co.-"Electric Transportation.,

## PRIZES AND HONORS

The Alumni Board of Trustees appropriate annually $\$ 100.00$ from the Alumni Prize Fund for an Alumni speaker, under the auspices of the Alumni Association; also a cash prize of $\$ 50.00$ to be awarded to that member of the graduating class who attains the highest average standing during the four year course. The prize for 1915 was awarded to Eleanor Margaret Bowman.

## THE OLIVER C. ASHTON PRIZES

Awarded for excellence in declamation.

1914-1915
In the Junior Class: First prize to Clarence Palmer ; second prize to Louise A. Mignin.
In the Sophomore Class: First prize to Inez Frederick; second prize to Dorothy Quinlan.

1915-1916
In the Senior Class: Contest not held.
the tomlinson prizes on the municipal UNIVERSITY
First Prize: Rhea Kathryn Miller; second prize, David Harley Darrah.

PHI SIGMA ALPHA
(An honorary society for the purpose of encouraging high scholarship. Three students are chosen for membership from each senior class.)

1915
Eleanor Margaret Bowman, Effie Murphy, Raymond Taylor.

## BUCHTEL COLLEGE ALUMNI ASSOCIATION,

Organized July, 1874<br>Incorporated October 19, 1809

OFFICERS FOR 1915-1916
President, A. E. Warner, '03;.......................................................


Secretary, Mrs. Cecil McNeil, '10.................................... Akron
Treasurer, K. D. Smith, '13............................................ Akron

## ALUMNI BOARD OF TRUSTEES

Officers

Mrs. C. C. McNeil, '10............................... Secretary ex-officio K. D. Smith, '13...................................... Treasurer ex-officio

Term Expiring June, 1916
Mrs. Susie C. Cole, '73.................................................. Akron


L. R. C. Eberhard, '93................................................. . . Akron

Term Expiring June, 1917
Mrs. E. F. Voris, '77........................................................ Akron
Howard Rohan, '10.......................................................................

Ethel Davies, '12................................................. . . . Barberton
Term Expiring June, 1918


Mrs. H. E. Simmons, '06...................................................... Akron

Annual meeting of the Association during Commencement.
Stated meetings of the Alumni Board of Trustees: the Thursday evening of the week following Commencement week, the third Thursday evening of November, February and May.

## SUMMARY OF ALUMNI



Occupations of AlumniActors2
Architects ..... 1

Chemists ............................................................................ 23 ..... 23
Clergymen
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Farmers
Forestry ..... 9
1
Government Employ ..... 4
Insurance and Real Estate. ..... 8
Lawyers ..... 41
Librarians ..... 2
Living at Home ..... 36
Lyceum Bureau Work ..... 1
Manufacturers4
Married ..... 89
Merchants
4
4
Musicians
3
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Nurses .....
19 .....
19
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R. R. Agents ..... 1
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11
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89
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