

## SCHOOL OF ENGINEERING

### FOREWORD

Graduate work in engineering is available on a late afternoon, early evening basis. This schedule of offerings will be continued and additional day classes will be scheduled in the future. Likewise, the course offerings and degree programs will be enriched and expanded as time passes and the needs of students can be met. This program is designed primarily for two broad categories of students: (1) those who are professionally employed on a full-time basis in the area and who wish to pursue further study; and (2) recent graduates who wish to increase their mastery of the field by doing advanced work. Specific programs in some or all of the several engineering disciplines—chemical, civil, electrical, industrial, management, mechanical, sanitary, etc.—will be developed in the future as the needs of students are recognized and as the resources of the University will permit.

The general objective of the School of Engineering is identical with the purpose of the University of Dayton in meeting its objective of serving the community and fulfilling its motto, *Pro Deo et Patria*. The specific purpose of the graduate program in engineering is to provide the best possible education for men and women at the graduate level for enriched careers in engineering. This purpose is achieved by developing those special capacities and capabilities of the student which enable him to become a thoroughly competent professional in his chosen field.

The program leading to the Master of Science in Engineering degree is designed primarily to meet the basic needs of the engineer in a changing world. Major emphasis is placed upon rigorous study of the engineering sciences in order to improve the individual's competence to deal with the increasingly complex body of knowledge underlying all engineering design, development, and research. Such emphasis also tends to increase the breadth of his fundamental knowledge and give him a greater flexibility and adaptability in dealing with tomorrow's unknowns. To this end emphasis is placed upon the problems common to all engineering disciplines. It is hoped that with this program the School of Engineering may lead the individual to his highest level of scholarship and stimulate him to achieve a genuine personal and professional maturity.

### RESEARCH FACILITIES

The facilities for research at the University of Dayton are administered by the "academic departments" and the University of Dayton Research Institute.

Some of the more important research facilities are one medium- and two large-scale digital computers, analog computer facilities and a sub-critical nuclear reactor.

### GRADUATE APPOINTMENTS

Industrial Fellowships and certain special research grants are available at the University of Dayton for the encouragement of graduate work and the promotion of research.

### GRADUATE STUDY BY MEMBERS OF THE STAFF

Any member of the research or instructional staffs, subject to the approval

of the head of his department or section, may carry not more than six credits of graduate work per semester.

Staff members holding the rank of professor or associate professor cannot become candidates for degrees from this institution. Staff members holding the rank of instructor or assistant professor may become candidates for degrees with the approval of the Dean of Engineering.

### ADMISSION

#### 1. Procedure:

- a. All students desiring admission to the graduate program of the School of Engineering must file a formal Application for Admission to Graduate Study in Engineering. This form may be secured from and must be returned to:

Chairman, Graduate Study Committee  
School of Engineering  
Room 201, St. Mary's Hall  
University of Dayton  
Dayton 9, Ohio

- b. Application for admission normally will require the following procedure:

- (1) Fill out the Application for Admission to Graduate Study in Engineering completely and return it to the office of the Chairman, Graduate Study Committee.
- (2) Furnish a transcript or transcripts of all undergraduate and graduate work pursued previously. Transcripts must be mailed directly by the Registrar of the institution where the work was done to the Chairman, Graduate Study Committee.
- (3) Supply three letters of recommendation from persons qualified to judge the candidate as a prospective graduate student. These should be mailed directly to the Chairman, Graduate Study Committee.
- (4) When requested, submit scores on the general aptitude and major subject sections of the Graduate Record Examination.
- (5) When from outside the United States, supply evidence of an adequate command of English, sufficient finances, and certification of health.
- (6) Have all this information in the office of the Chairman, Graduate Study Committee, by August 15 for fall semester admission, and by January 1 for the spring semester. It is the responsibility of the student that his application with all the necessary supporting documents be complete and in order before the specified date to be admitted to regular status.

#### 2. Qualifications:

There are certain basic requirements which must be met by all applicants. These include the following:

- a. Bachelor's degree in engineering from an institution having curricula accredited by the Engineers' Council for Professional Development.
- b. A cumulative grade point average of 3.00 for the last two years of undergraduate curriculum. This is based upon a grading system in which A = 4.00.
- c. Exceptions to the above requirements will be considered on an indi-



vidual basis by the Graduate Study Committee of the School of Engineering.

### TIME LIMIT

The program must be completed within five years after admission to candidacy. (Period of service in the armed forces is not included.)

### PLANNING GRADUATE STUDY

The major objectives of graduate study are scholastic competence, independence and maturity of thought. The student must accept responsibility for his own education and should master those aspects of learning which will give him confidence in his own judgments.

### THE MASTER'S PROGRAM IN ENGINEERING

The Dean of the School of Engineering will appoint a student advisory committee for each Regular Student admitted to graduate study. Working with this committee, each student will develop a program of study which is deemed best for his particular interests and objectives and which is recommended by the committee chairman. The student then must file this program of study with and secure the approval of the Graduate Study Committee of the School of Engineering.

#### 1. Credits:

Each program of study must include a minimum of 33 credit hours consisting of:

- a. 6-9 credit hours in Basic Sciences;
- b. 12 credit hours in Engineering Sciences;
- c. 3 credit hours in Philosophy;
- d. 3-6 credit hours in Thesis Related Topics approved by the student's advisory committee;
- e. 6 credit hours on an approved thesis project.

A graduate student may not change from one major to another without written permission from the Graduate Study Committee, School of Engineering, and the Dean of Engineering.

#### 2. Courses:

##### a. Basic Sciences

6-9 credit hours selected from the following courses:

MTH 421	PHY 505	CHM 508
MTH 422	CHM 507	

##### b. Engineering Sciences:

12 credit hours selected from the following courses:

EGR 501 Applied Elasticity	3 credit hours
EGR 502 Mechanics of Fluids	3 credit hours
EGR 503 Thermodynamics	3 credit hours
EGR 504 Mass and Energy Transport	3 credit hours
EGR 505 Properties of Materials	3 credit hours
EGR 506 Solid State Devices	3 credit hours

##### c. Philosophy

EGR 522 Phil. Found. of Eng.	3 credit hours
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##### d. Thesis Related Courses:

3-6 credit hours in courses approved by the student's advisory committee.

e. Thesis:

6 credit hours on an approved research project.

**3. Comprehensive Examination and Admission to Candidacy:**

The student must satisfactorily pass a comprehensive examination before he is granted admission to candidacy for the degree. The examination may be written, oral or both. This examination may be taken after the student has completed 18 or more credit hours of graduate class work with a cumulative grade point average of 3.00 or better. The student's advisory committee administers the examination.

**4. Application for Admission to Candidacy:**

An application for comprehensive examination and admission to candidacy may be obtained from the Office of the Dean of Engineering. This form must be filled out and filed in that office at least four weeks prior to the date requested for the examination.

**5. Thesis:**

Presentation of a thesis is required of all candidates. Joint authorship is not permitted. Copies of the completed thesis must be in the hands of the student's advisory committee and the librarian for approval two weeks prior to the date fixed for the final oral thesis examination. After the final oral examination, two complete and approved typewritten copies of the thesis shall be deposited with the librarian. These copies of the thesis must be deposited not less than two weeks prior to commencement. A charge of \$10.00 will be made to cover library costs and binding.

The student should consult the University of Dayton Thesis Manual, prepared for use of students in the Engineering Graduate School, before arranging for the typing of his thesis.

**6. Final Oral Thesis Examination:**

An application for final oral thesis examination may be obtained from the Office of the Dean of Engineering. This form should be filled out and signed by the Chairman of the student's advisory committee and filed in the Office of the Dean of Engineering at least two weeks prior to the date requested for the oral examination.

**7. Degrees:**

The School of Engineering at the present time offers one graduate program of study leading to the degree Master of Science in Engineering. The requirements for this degree are outlined as follows:

- a. Obtain admission to candidacy.
- b. Complete a prescribed program of study with a minimum of 33 credit hours of which at least 24 credit hours must be with grades of "A" or "B."
- c. Earn a cumulative grade point average of 3.00 or better.
- d. Submit an acceptable thesis.
- e. Satisfactorily pass an oral thesis examination.

In fulfilling the requirements for the degree, certain specific conditions



prevail and should be noted carefully by the student. These are itemized as follows:

a. Credits in Transfer

Transfer credit is determined on an individual basis by the committee charged with this responsibility.

b. Course Load

Any person who is not a full-time student may register for more than six credit hours per semester only with permission of the Graduate Study Committee.

c. Use of Advanced Undergraduate Courses

Certain undergraduate level courses may be used if approved by the student's advisory committee.