­­­

UNDERGRADUATE STUDENT

HANDBOOK

2015 – 2016

Department of Chemical & Materials Engineering

Kettering Labs Room 524

University of Dayton

Dayton, OH 45469-0256

Telephone: (937) 229-2627

Fax: (937) 229-3433

Web Page

<http://udayton.edu/engineering/chemical_and_materials/index.php>

August 2015

Student Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Advisor **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Mission Statement**

The mission of the Chemical Engineering Department is to educate students who are highly sought after by employers internationally, excel in graduate and professional schools, engage in life-long learning, make significant contributions to the profession and society. The department will promote and support integrated teaching/learning, scholarship, and the Marianist tradition of community, leadership, and service.

**Chemical Engineering Program Educational Objectives**

1. Chemical Engineering graduates succeed in their chosen vocation, with successful careers in the chemical process industry and related fields, and excel in graduate school.

2. Chemical Engineering graduates are committed to performing ethically while serving their professions, companies, and communities.

3. Chemical Engineering graduates exhibit strong critical thinking skills from the breadth of their general education and the depth of their foundation in engineering principles, and engage in continuous intellectual and personal growth.

4. Chemical Engineering graduates are committed to the Marianist tradition of community, leadership, and service.

**Chemical Engineering Program Outcomes**

1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to design and conduct experiments, analyze and interpret data.
3. An ability to design a system, component, or process to meet needs within realistic constraints, such as environmental, social political, ethical, health and safety, manufacturability, and sustainability.
4. An ability to function on multidisciplinary teams.
5. An ability to identify, formulate, and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. A recognition for the need for, and an ability to engage in life-long learning.
10. A knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

**Introduction**

This handbook has been prepared to inform and assist Chemical Engineering students about their program of study and about the Chemical Engineering Department at the University of Dayton. Most of the information presented is available in other sources, but it has been collected here for your convenience.

With the other activities and information you are being inundated with the first few weeks of college, it will be hard to digest all of the information contained in this handbook at once. So when you have settled into your routine of classes it is very important that you take some time to examine the information contained herein, especially the following:

Table of Contents

[Departmental Directory 5](#_Toc427679404)

[Program - Bachelor of Chemical Engineering 6](#_Toc427679405)

[Academic Calendar 2015-2016 10](#_Toc427679406)

[Common Academic Program 13](#_Toc427679407)

[Minors in the School of Engineering 16](#_Toc427679408)

[Recommended Minors in CME 17](#_Toc427679409)

[MBA Ready Program 25](#_Toc427679410)

[Engineering Program Summary 25](#_Toc427679411)

[Transient Student Certificaion Form 29](#_Toc427679412)

[Modify/Waive Form Process 30](#_Toc427679413)

[Drop/Add Fom Process 31](#_Toc427679414)

[Approved Technical Elective Classes 33](#_Toc427679415)

[Recommended Practical Ethical Action CAP Classes 42](#_Toc427679416)

[Retake Policy 43](#_Toc427679417)

[UD Web Sites 44](#_Toc427679418)

[UD Offices 45](#_Toc427679419)

[Co-op program, Internship and Honors 46](#_Toc427679420)

[Get Involved 52](#_Toc427679421)

[Information for the New Chemical Engineering Student 53](#_Toc427679422)

[Faculty of the Department of Chemical Engineering 54](#_Toc427679423)

Bachelor in Chemical Engineering

Chemical engineering applies the principles of the physical sciences, economics, and human relations to research, design, build, and supervise facilities that convert raw materials into useful products and services.   
  
The majority of chemical engineers are involved in the chemical process industries that produce many of the materials and items needed in everyday life. These include medicine, food, fertilizers, plastics, synthetic fibers, petroleum, petrochemicals, ceramics, and pulp and paper products. A chemical engineer may pursue a professional career in many other fields, such as energy conversion, pollution control, medical research, and materials development in aerospace and electronic industries. Chemical engineers are employed in research, development, design, production, sales, consulting, and management positions. They are also found in government and education. Many use a chemical engineering education as a stepping stone to law, medicine, or corporate management.   
  
The curriculum in chemical engineering serves as basic training for positions in these diverse areas of the manufacturing industry or for graduate study leading to advanced degrees. The first part of the chemical engineering curriculum provides a firm foundation in mathematics, physics, and chemistry. The chemistry background is stressed. The second part of the curriculum offers a balance between classroom and laboratory experience in stressing chemical engineering topics such as transport phenomena, thermodynamics, kinetics and reactor design, separation processes, fluid flow and heat transfer operations, process control, and process design. The development of design tools, communication, and interpersonal skills is integrated throughout the curriculum. The curriculum allows concentrations in emerging technologies such as bioengineering, environmental engineering and materials engineering. Those interested in attending medical /dental school can pursue a pre-med preparation as part of their curriculum.

The Chemical Engineering Department at the University of Dayton is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The full-time faculty focuses on core courses in the Chemical Engineering program, while part-time faculty members from industry bring current industrial practice to the classroom.

## Departmental Directory

**Departmental Offices:** Kettering Labs 524 **Telephone:** (937) 229-2627

(On campus – dial 92627)

**Web Site Address:**

<http://www.udayton.edu/engineering/chemical_and_materials/index.php>

**Department Chairman:** Dr. Charles Browning  
 Kettering Labs 524

cbrowning1@udayton.edu

**Chemical Engineering Director:** Dr. Michael Elsass

Kettering Labs 524

melsass1@udayton.edu

**Administrative Assistant:** Janet Pastor

Kettering Labs 524

jpastor1@udayton.edu

**Lab Manager:** Mike Green - Science Center Room 177A

Undergraduate Student Advisor: Your first year advisor is Mrs. Liz Mancini.

**Graduate Studies Coordinator: Dr. Kevin J. Myers**

**Faculty**

Mr. Thane Brown   
Dr. Charles E. Browning – KL 524

Dr. Amy Ciric – KL 521

Dr. Kristen Comfort – KL 508

Dr. Don Comfort – KL 508

Dr. Matthew J. Dewitt – KL 150

Dr. Michael Elsass – KL 524

Dr. Joseph Fellner

Dr. Ryan Justice

Dr. Khalid Lafdi – KL 542

Dr. Donald A. Klosterman – KL 542

Dr. C. William Lee – KL 508

Dr. Kevin Myers – KL 524

Dr. Jennifer Reid – KL 506

Dr. Sarwan S. Sandhu – KL 508

Dr. Tony Saliba – KL 542

Dr. Erick Vasquez – KL 542

Dr. Robert Wilkens – KL 524

**UNIVERSITY OF DAYTON - SCHOOL OF ENGINEERING**

## Program - Bachelor of Chemical Engineering 1 Total: 137 Credit Hours

August 2015

|  |  |  |  |
| --- | --- | --- | --- |
| Dept. No. | Course | Credit Hours | |
|  | FRESHMAN YEAR |  | |
| CME 101 | Introduction to Chemical Engineering | 2 | |
| CHM 123-124 | General Chemistry I, II & Labs | 8 | |
| MTH 168-169 | Analytic Geometry & Calculus I, II | 8 | |
| PHY 206 | General Physics I | 3 | |
| EGR 103 | Engineering Innovation | 2 | |
| ENG 100 | Writing Seminar I | 3 | |
| XXX.XXX | Humanities Base | 3 | |
| XXX.XXX | Humanities Base | 3 | |
| XXX.XXX | Humanities Base | 3 | |
| EGR 100 | Engineering Workshops | 0 | |
|  |  | 35 | |
|  |  |  |  |
|  | SOPHOMORE YEAR | 1ST Term | 2nd Term |
| CHM 313-314 | Organic Chemistry I, II & Labs | 3-3-4 | 3-3-4 |
| CME 200 | Professional Development Seminar | 1-0-0 | 1-0-1 |
| CME 203 | Material & Energy Balances | 3-0-3 |  |
| ENG 200 | Writing Seminar II | 3-0-3 |  |
| EGR 202 | Engineering Thermo | 3-0-3 |  |
| MTH 218 | Analytic Geometry and Calculus III | 4-0-4 |  |
| CME 281 | Chemical Engineering Computations |  | 3-0-3 |
| MTH 219 | Applied Differential Equations |  | 3-0-3 |
| PHY 207 | General Physics II |  | 3-0-3 |
| CMM 100 | Fundamentals of Communication | \_\_\_\_\_\_ | 3-0-3 |
|  |  | 17 | 17 |
|  | JUNIOR YEAR |  |  |
| CME 311 | Chemical Engineering Thermodynamics | 3-0-3 |  |
| CME 324-325 | Transport Phenomena I, II | 3-0-3 | 3-0-3 |
| CME 381 | Applied Mathematics for Chemical Engineers | 3-0-3 |  |
| EGR 201 | Engineering Mechanics | 3-0-3 |  |
| XXX.XXX | General Education Course3 | 3-0-3 |  |
| SSC 200 | General Education Course | 3-0-3 |  |
| CME 306 | Chemical Reaction Kinetics and Engineering |  | 3-0-3 |
| CME 326L | Transport Phenomena Laboratory |  | 1-3-2 |
| CME 365 | Separation Techniques |  | 3-0-3 |
| EGR 203 | Electrical & Electronic Circuits |  | 3-0-3 |
| XXX.XXX | General Education Course | \_\_\_\_\_\_ | 3-0-3 |
|  |  | 18 | 17 |
|  | SENIOR YEAR |  |  |
| CME 408 | Seminar | 0/1 | 0/1 |
| BIO/CHM.zzz | Biology/Chemistry Elective | 3-0-3 |  |
| CME 430-431 | Chemical Engineering Design I, II | 3-0-3 | 3-0-3 |
| CME 452 | Process Control | 3-0-3 |  |
| CME 465 | Flow & Heat Transfer Processes | 3-0-3 |  |
| CME 466L | Chemical Engineering Unit Operations Laboratory | 0-5-2 |  |
| XXX.XXX | General Education Course | 3-0-3 |  |
| CME 453L | Process Control Laboratory |  | 0-5-2 |
| CME XXX | Chemical Engineering Elective2 |  | 3-0-3 |
| XXX.XXX | Engineering/Science Elective2 |  | 3-0-3 |
| XXX.XXX | Engineering/Science Elective2 |  | 3-0-3 |
| XXX.XXX | General Education Course | \_\_\_\_\_\_ | 3-0-3 |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | 18 | 17 |

1All engineering mathematics and science courses must be taken for grading option 1.  
2Selected from list approved by the Department of Chemical and Materials Engineering  
3Ethics requirement - choose from the list approved by the Department of Chemical and Materials Engineering  
All engineering, mathematics and science courses must be taken under Grading Option

**Bachelor of Chemical Engineering 2015**

1st Sem2nd Sem 3rd Sem 4th Sem 5th Sem 6th Sem 7th Sem 8th Sem

17 Cr. 17 Cr. 17 Cr. 17 Cr. 18 Cr. 17 Cr. 17/18 Cr. 17/18 Cr.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| .  ENG 100 (3) | CME  203 (3) the document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CHM 313 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  EGR 202 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  HST 103 (3) m the document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |  | EGR 201(3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  SSC 200 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CHM 314 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 381 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  EGR 203 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 452 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME EL (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 325 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 431 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 465 (3) ion the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 306 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 324 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 311 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 365 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CME 311 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  GEN ED (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  GEN ED (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  GEN ED (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  GEN  ED (3) You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  CMM 100 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |  |  |  |  |
| PHL 103 (3) | REL 103 (3) |  | CME 281 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |  |  | CME 466L (2) interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] | CME 453L (2) an position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |
| CME  101 (0/1) | PHY 207 (3)    PHY 206 (3) |  |  |  |  |  | CME 408 (0/1) )document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |
| CHM 123 (3) | CHM  124 (3) |  |  |  |  |  |  |
| CHM 123L (1) | CHM 124L (1) | CHM 313L (1) rom the document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  MTH 218 (4) rom the document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] | CHM 314L (1) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |  | CME 326L (2) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] | CME 430 (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |  |
| MTH  168 (4) | MTH  169 (4)  EGR  100 (0) |  | MTH 219 (3) |  |  |  |  |
|  |  |  |  |  |  | CME 408 (0/1) position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] | TECH EL (3)) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |
| EGR 103 (2) | CME  101 (0/1) | CME  200 (0/1) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]  ENG 200 (3) rom the document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] | CME  200 (0/1) |  |  | CHM/ BIO EL (3) y of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] | TECH EL (3) document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.] |
| EGR 100 (0) |  |  |  |  |  |  |  |

General Education Electives  
(5 different courses. One must be an ethics course.)

Humanities Base CME Course .. …. Co-Requisite

General Science Math \_\_\_\_ Prerequisite

\* Prerequisites not all listed

Technical Elective  
(approved list of electives in CME Office)

**Chemical Engineering Typical Schedule of Course Offerings**

**\_\_\_\_\_\_** Prerequisites

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course** | **Hours** | **Fall** | **Spring** | **Summer** |
| Material & Energy Balances | 3 | CME 203 | CME 203 |  |
| Professional Development Seminar | 0/1 | CME 200 | CME 200 |  |
| Computational Methods | 3 |  | CME 281 | CME 281 |
| Kinetics | 3 |  | CME 306 | CME 306 |
| Thermodynamics | 3 | CME 311 | CME 311 |  |
| Transport Phenomena I | 3 | CME 324 | CME 324 |  |
| Transport Phenomena II | 3 |  | CME 325 | CME 325 |
| Transport Lab | 2 |  | CME 326L | CME 326L |
| Separation Processes | 3 |  | CME 365 | CME 365 |
| Applied Math | 3 | CME 381 | CME 381 |  |
| Seminar | 0/1 | CME 408 | CME 408 |  |
| Intro. Polymers | 3 | CME 409 |  |  |
| Chemical Eng. Design I | 3 | CME 430 |  |  |
| Chemical Eng. Design II | 3 |  | CME 431 |  |
| Chemical Product Design | 3 |  |  | CME 432 |
| Process Control | 3 | CME 452 |  |  |
| Flow & Heat Transfer Processes | 3 | CME 465 |  |  |
| Process Control Lab | 2 |  | CME 453L |  |
| Unit Operations Lab | 2 | CME 466L |  |  |
| Intro to Petrol. Engineering\*\* | 3 |  | CME 486 |  |
| Intro to Bioengineering | 3 | CME 490 |  |  |
| Intro to Biomedical Engineering | 3 |  | CME 491 |  |
| Special Problems | 1-3 | CME 499 | CME 499 |  |
| Adv. Thermodynamics | 3 | CME 507 |  |  |
| Intro. Polymers | 3 | CME 509 |  |  |
| Polymer Properties\*\* | 3 |  | CME 510 |  |
| Principles of Corrosion | 3 | CME 511 |  |  |
| Advanced Composites | 3 | CME 512 |  |  |
| Adv. Transport Phenomena | 3 | CME 521 |  |  |
| Topics of Transport\* | 3 |  | CME 522 |  |
| Fund & Appl of Fuel Cells\* | 3 |  | CME 524 |  |
| Methods of Polymer Analysis | 3 |  |  | CME 527 |
| Chemical Behavior of Materials | 3 |  | CME 528 |  |
| Chemical Product Design | 3 |  |  | CME 532 |
| Adv. Kinetics\*\* | 3 |  | CME 542 |  |
| Reaction Engineering\*\* | 3 |  | CME 543 |  |
| Agitation\* | 3 |  |  | CME 550 |
| Air Pollution Engr. I&II\* | 3 | CME 574 | CME 575 |  |
| Environmental Engr. Sep.\* | 3 |  |  | CME 576 |
| Materials for Adv. Energy Appl. | 3 |  | CME 579 |  |
| Adv. Math I-Analytical | 3 | CME 581 | CME 581 |  |
| Adv. Math II-Numerical | 3 |  | CME 582 |  |
| Process Modeling\* | 3 |  |  | CME 583 |
| Intro to Petrol Engineering\*\* | 3 |  | CME 586 |  |
| Intro to Bioengineering | 3 | CME 590 |  |  |
| Intro to Biomedical Engineering | 3 |  | CME 591 |  |
| Chemical Sensors & Biosensors\* | 3 |  |  | CME 592 |
| Special Problems | 3 | CME 595 | CME 595 | CME 595 |
| Thesis | 3 | CME 599 | CME 599 | CME 599 |

\* Offered on as needed basis   
 \*\* Offered in alternate years

**UNIVERSITY OF DAYTON – SCHOOL OF ENGINEERING**

Chemical Engineering Curriculum

Guide to Course Prerequisites

Revised, August 2015

To use this guide, find the “KEY COURSE” of interest in the center column. Then, the left   
 column gives prerequisites for that course, and the right column lists subsequent courses, which require the key course as a prerequisite.

|  |  |  |
| --- | --- | --- |
| Prerequisite | Key Course | Prerequisite for: |
|  |  |  |
| High School Chemistry | CHM 123 | CHM 124, CME 203 |
| CHM 123 | **CHM 124** | CHM 313 |
| MTH 116 or equivalent | **MTH 168** | MTH 169, CME 203, EGR 201,  EGR 202, EGR 203 |
| MTH 168 or 138 | **MTH 169** | MTH 218 |
| MTH 168 or 148 | **PHY 206** | PHY 207, EGR 201 |
|  |  |  |
| CHM 123, MTH 168, EGR 202 (co-req) | **CME 203** | CME 281,CME 311, CME 324,  CME 430 |
| CME 203 | **CME 281** | CME 324, CME 381 |
| CHM 124 | **CHM 313** | CHM 314 |
| CHM 313 | **CHM 314** |  |
| MTH 168, PHY 206 | EGR 201 |  |
| MTH 168 | EGR 202 |  |
| MTH 168 | EGR 203 |  |
| MTH 169 | MTH 218 **MTH 219** | MTH 219, CME 311 |
| MTH 218 | CME 324, CME 381 |
| PHY 206, MTH 169 (co-req) | **PHY 207** |  |
|  |  |  |
| CME 311 | **CME 306** | CME 431 |
| CME 203, MTH 218 | **CME 311** | CME 365, 306, 465 |
| CME 203, CME 281, MTH 219 | **CME 324** | CME 325, 326L, 365, 465 |
| CME 381 (co-req) |  |  |
| CME 324, CME 381 | **CME 325** |  |
| CME 324, CME 325 (co-req) | **CME 326L** |  |
| CME 311, CME 324 | **CME 365** | CME 466L, CME 431 |
| MTH 219, CME 281 | **CME 381** | CME 325, CME 452 |
| CHM 201 or equivalent | **CHM 304** |  |
|  |  |  |
| CME 203 | **CME 430** | CME 431 |
| CME 311, CME 324 | **CME 465** | CME 431 |
| CME 365, CME 465 (co-req) | **CME 466L** | CME 453L |
| CME 381, | **CME 452** | CME 453L |
| CME 430, 465, 306, 365 | **CME 431** |  |
| CME 466L, CME 452 | **CME 453L** |  |
|  |  |  |

# **Academic Calendar 2015-2016**

*https://registrar.udayton.edu/academiccalendar.asp*

**First Term**

Mon, Aug 3 Degrees conferred—no ceremony

Tue, Aug 18 New Graduate Assistant Orientation

Thu, Aug 20 New Faculty Orientation

Sat, Aug 22 Incoming First Year students move into UD Housing

Sat—Tue, Aug 22-25 New Student Orientation

Sun, Aug 23 Upperclass students move into UD Housing

Tue, Aug 25 New Student Convocation

Tue, Aug 25 Last day to complete registration

Wed, Aug 26 Classes begin at 8:00 am

Tue, Sep 1 Last day for late registration, change of grading options and schedules

Mon, Sep 7 Labor Day—no classes

Tue, Sep 8 Last day to change Second Session and full Summer Term grades

Fri, Sep 11 Faculty Meeting at 3:30 p.m.

Wed, Sep 16 Last day to drop classes without record

Fri, Sep 18 Academic Senate Meeting at 3:30 (KU Ballroom)

Fri-Sun, Sep 18-20 Family Weekend

Wed, Oct 7 Mid-Term Break begins after last class

Mon, Oct 12 Classes resume at 8:00 am

Thu, Oct 15 Last day for Graduate and Doctoral students to apply for December 2015 graduation

Fri, Oct 16 Academic Senate Meeting at 3:30 p.m. (KU Ballroom).

Wed, Oct 21 First-Year students’ midterm progress reports due by 4:00 pm

Sun, Nov 1 Last day for Undergraduate students to apply for May 2016 graduation

Fri, Nov 13 Academic Senate Meeting at 3:30 p.m. (KU Ballroom)

Mon, Nov 16 Last day to drop classes with a record of a W

Tue, Nov 24 Thanksgiving recess begins after last class

Sat, Nov 28 Saturday classes meet

Mon, Nov 30 Classes resume at 8:00 am

Tue, Dec 8 Feast of the Immaculate Conception/Christmas on campus – no classes

Fri, Dec 11 Last day of classes

Fri Dec 11 Academic Senate Meeting at 3:30 p.m. (KU Ballroom)

Sat Dec 12 Study Day

Sun Dec 13 Study Day

Mon-Fri, Dec 14-18 Exams—Fall Term ends after final examinations

Fri, Dec 18 University Housing closes for Christmas Break at 6:00 p.m.

Sat, Dec 19 Diploma Exercises at 9:45 am

Tue, Dec 22 Grades due by 9:00 am

Wed, Dec 23 End of term processing officially complete

Mon, Jan 25 Last day to change Fall Term grades

CHRISTMAS BREAK

Sun, Dec 20 Christmas Break begins

Sun, Jan 18 Christmas Break ends

**Spring 2016**

Fri, Jan 15 Last day to complete registration

Sun, Jan 17 University Housing reopens for Spring Term at 8:00

Tue, Jan 19 Classes begin at 8:00 a.m.

Fri, Jan 22 Academic Senate Meeting at 3:30 p.m. (KU Ballroom)

Mon, Jan 25 Last day for late registration, change of grading options and schedules

Mon, Jan 25 Last day to change Fall Term grades

Mon, Feb 1 Last day for Graduate and Doctoral students to apply for May 2016

Graduation

Mon, Feb 8 Last day to drop classes without record

Fri, Feb 19 Academic Senate Meeting at 3:30 p.m. (KU Ballroom)

Wed, Feb 24 Spring Break begins after last class

Thu, Feb 25 Thursday only Graduate classes meet  
Mon, Feb 29 Classes resume at 8:00 am

Wed, Mar 11 Academic Senate Meeting at 3:30 p.m.

Tue, Mar 15 Last day for Undergraduate students to apply for August 2016 graduation

Wed, Mar 16 First-Year students’ midterm progress grades due by 4:00 p.m.

Wed, Mar 23 Easter Recess begins after last class

Mon, Mar 28 Easter Monday – no day classes – classes resume at 4:30 p.m.

Fri, Apr 1 Last day for Undergraduate students to apply for December 2016

Graduation

Mon, Apr 11 Last day to drop class with record of W

Fri, Apr 15 Academic Senate Meeting at 3:30 p.m. (KU Ballroom)

Wed, Apr 20 Bro. Joseph W. Stander Symposium-Alternate Day of Learning

Fri, Apr 29 Last day of classes

Sat, Apr 30 Study Day

Sun, May 1 Study Day

Mon-Fri, May 2 - 6 Exams – Spring Term ends after final examinations

Fri, May 6 University Housing closes for Spring Term at 6:00 p.m.

Sat, May 7 Doctoral/Graduate Commencement Exercises at 12:45 p.m.

Sun, May 8 Undergraduate Commencement Exercises at 9:45 a.m.

Tue, May 10 Grades due by 9:00 a.m.

Fri, May 13 Faculty Meeting at 3:30 p.m.

Mon, Jun 13 Last day to change Spring Term grades

**Summer 2016 -- First Session**

,

Fri, May 13 Last day to complete registration

Sat, May 14 Saturday classes begin

Mon, May 16 Classes begin at 8:00 a.m.

Tue, May 17 Last day for late Summer Term-First Session registration, change of grading options and schedules

Thu, May 19 Last day for late full Summer Term registration, change of grading options and schedules

Wed, May 25 Last day to drop without record from First Session classes

Mon, May 30 Memorial Day--no classes

Mon, Jun 6 Last day to drop with record of W from full Summer Term classes

Mon, Jun 13 Last day to drop with record of W from First Session classes

Mon, Jun 13 Last day to change Spring Term grades

Fri-Sat, Jun 24 – 25 Exams – full Summer Term classes do not meet, First Session ends after final examinations

Tue, Jun 28 Grades due by 9:00 a.m.

Thu, Jun 30 End of term processing officially complete

Fri, Jul 1 Last day Graduate and Doctoral students to apply for August 2016 graduation

Thu, Jul 28 Last day to change First Session grades

Summer 2016 – Second Session

Fri, Jul 24 Last day to complete registration

Sat, Jul 25 Saturday classes being

Mon, Jun 27 Second Session classes begin

Tue, Jun 28 Last day for late Summer Term-Second Session registration, change of grading options and schedules

Fri, Jul 1 Last day for Graduate and Doctoral students to apply for August 2016 graduation

Mon, Jul 4 Independence Day -- no classes

Thu, Jul 7 Last day to drop without record from Second Session classes Term classes

Mon, Jul 18 Last day to drop with record of W from Second Session and full term Summer Term classes

Thu, Jul 28 Last day to change First Session grades

Fri-Sat, Aug 5 – 6 Exams – Second Session and full Summer Term end after final examinations

Mon, Aug 8 Degrees conferred – no ceremony

Tue, Aug 9 Grades due by 9:00 a.m.

Thu, Aug 11 End of term processing officially complete

Mon, Sep 12 Last day to change Second Session and full Summer Term grades

Notes: The dates of all Academic Senate and General Faculty meetings will be posted to the calendar when they are determined.

Events are subject to change

Please consult the Human Resources Holiday Schedule for University office closings.

Fri-Sat, Jun 19-20 Exams--full Summer Term classes do not meet

First Session ends after final examinations

Tue, Jun 23 Grades due by 9:00 a.m. - Deficiency slips due in Deans' offices

Thu, Jun 25 Grades posted

Wed, Jul 1 Last day for Graduate and Doctoral students to apply for August 2015

graduation

Wed, Jul 1 Last day to drop without record from full Summer Term classes

Tue, Jul 28 Last day to change First Session grades,

**Third Term – Second Session**

Fri, Jun 19 Last day to complete registration

Sat, Jun 20 Saturday classes begin

Mon, Jun 22 Second Session classes begin

Tue, Jun 23 Last day for late Summer Term-Second Session registration, change of grading options and schedules

Wed, Jul 1 Last day for Graduate and Doctoral students to apply for August 2015 graduation

Wed, Jul 1 Last day to drop without record from Second Session and full Summer Term classes

Fri, Jul 3 Independence Day--no classes

Mon, Jul 13 Last day to drop with record of W from Second Session and full Summer Term classes

Tue, Jul 28 Last day to change First Session grades

Fri-Sat, Jul 31-Aug 1 Exams--Second Session and full Summer Term end after final

examinations

Mon, Aug 3 Degrees conferred--no ceremony

Tue, Aug 4 Grades due by 9:00 a.m. - Deficiency slips due in Deans' offices

Thu, Aug 6 Grades posted

Tue, Sep 8 Last day to change Second Session and full Summer Term grades

## Common Academic Program

The University of Dayton created the Common Academic Program (CAP) to address the learning needs of students who will be leaders in the 21st Century. As leaders, graduates must respond well to rapid and sometimes dramatic changes in society and the workplace, a need the CAP addresses through engaging and informative introductions to a range of academic disciplines which students critique and synthesize. University of Dayton students will prepare for the future by applying knowledge, skills and values to real life experiences, through broad exploration, by linking theory and creative thought with practice, and through integrative involvement. Experiences at the University of Dayton will enable graduates to be recognized for their outstanding abilities and their meaningful contributions to the workplace and society.

**Five Primary Characteristics Guide the   
Common Academic Program.**

1. First, the CAP intentionally sequences courses so that over time students build knowledge of and expertise in understanding, analyzing, and demonstrating the seven central learning goals and outcomes.
2. Second, it calls on students to integrate what they learn by requiring them to take courses which intentionally cross disciplinary boundaries and incorporate relevant non-classroom experiences.
3. Third, the CAP emphasizes assessment of student learning to guide continual course improvement.
4. Fourth, students are engaged through application of knowledge in learning centered tasks.
5. Finally, professional and vocational learning opportunities are expansive and include skills valued by employers: communication, decision-making, and critical thinking.

**Student Learning Outcomes of the  
Common Academic Program**

1. **Scholarship:** All undergraduates will develop and demonstrate advanced habits of academic inquiry and creativity through the production of a body of artistic, scholarly or community-based work intended for public presentation and defense
2. **Faith traditions:** All undergraduates will develop and demonstrate ability to engage in intellectually informed, appreciative, and critical inquiry regarding major faith traditions. Students will be familiar with the basic theological understandings and central texts that shape Catholic beliefs and teachings, practices, and spiritualities. Students’ abilities should be developed sufficiently to allow them to examine deeply their own faith commitments and also to participate intelligently and respectfully in dialogue with other traditions.
3. **Diversity**: All undergraduates will develop and demonstrate intellectually informed, appreciative, and critical understanding of the cultures, histories, times, and places of multiple others, as marked by class, race, gender, ethnicity, religion, nationality, sexual orientation, and other manifestations of difference. Students’ understanding will reflect scholarly inquiry, experiential immersion, and disciplined reflection.
4. **Community:** All undergraduates will develop and demonstrate understanding of and practice in the values and skills necessary for learning, living, and working in communities of support and challenge. These values and skills include accepting difference, resolving conflicts peacefully, and promoting reconciliation; they encompass productive, discerning, creative, and respectful collaboration with persons from diverse backgrounds and perspectives for the common purpose of learning, service, and leadership that aim at just social transformation. Students will demonstrate these values and skills on campus and in the Dayton region as part of their preparation for global citizenship.
5. **Practical wisdom:** All undergraduates will develop and demonstrate practical wisdom in addressing real human problems and deep human needs, drawing upon advanced knowledge, values, and skills in their chosen profession or major course of study. Starting with a conception of human flourishing, students will be able to define and diagnose symptoms, relationships, and problems clearly and intelligently, construct and evaluate possible solutions, thoughtfully select and implement solutions, and critically reflect on the process in light of actual consequences.
6. **Critical evaluation of our times:** Through multidisciplinary study, all undergraduates will develop and demonstrate habits of inquiry and reflection, informed by familiarity with Catholic Social Teaching, that equip them to evaluate critically and imaginatively the ethical, historical, social, political, technological, economic, and ecological challenges of their times in light of the past.
7. **Vocation:** Using appropriate scholarly and communal resources, all undergraduates will develop and demonstrate ability to articulate reflectively the purposes of their life and proposed work through the language of vocation. In collaboration with the university community, students’ developing vocational plans will exhibit appreciation of the fullness of human life, including its intellectual, ethical, spiritual, aesthetic, social, emotional, and bodily dimensions, and will examine both the interdependence of self and community and the responsibility to live in service of others.

## MINORS IN THE SCHOOL OF ENGINEERING

Specialization has become an increasingly important aspect of engineering practice. It is often advantageous for School of Engineering graduates to have both a balanced education in one of the traditional disciplines and specialized training in a specific area complementary to that discipline.

In recognition of this trend, the School of Engineering has a program of minors which, in some cases, may be pursued throughout the existing electives of your current engineering curriculum. The minors program serves the needs of the student by providing options which open avenues of study to fulfill specific educational goals/career objectives.

Election of a minor is strictly at the student’s option and does not affect the present credit hour requirements for graduation. This is typically done at the beginning of the student’s junior year. There is no penalty for discontinuing a minor program of study provided the unfulfilled balance of free and technical electives are taken in accordance with current degree requirements. Successful completion of a minor will be recorded by its formal title on the student’s official transcript.

A minor consists of at least 12 semester hours of coursework sequenced such that the program of study can be completed in the third and fourth years of study. The first course in each minor will usually satisfy any prerequisite requirements for subsequent courses in that minor. Moreover, the first course will usually provide the necessary technical background needed by those students entering the program from other engineering disciplines. The courses in a minor are taken for **undergraduate credit, grading option 1 only**. Courses required for the minor may not be offered every term.

To designate a minor, the ***Request for Approval of a Minor*** form, page 18 of this booklet is available in the Office of the Dean of Engineering (KL 564), and should be completed by the student and signed by the chair of the School of Engineering department offering the minor. The form should then be submitted to the Office of the Dean, KL 564. When the minor has been successfully completed, the dean will notify the Registrar’s Office, and the minor will become a part of the student’s permanent record. In some instances, it may be beneficial to the student to substitute courses in an approved minor program. Such changes can be submitted on the ***Request for Approval of a Minor*** form and must be approved by the student’s advisor, appropriate department chairperson, and the dean.

An undergraduate student who wishes to complete a minor in an area outside of the School of Engineering may do so by completing the courses selected by the department offering the minor. In addition to the 12 semesters there will likely be additional prerequisite courses.

Detailed descriptions of the School of Engineering minors are provided in this brochure. It is anticipated that additional minors will evolve on a continuing basis from faculty‑student endeavors. A special minor, not listed, can be created with the approval of the advisor, the chairperson offering the minor, and the School of Engineering Academic Committee.

## Recommended Minors in CME

For a complete list of minors, please refer to

http://www.udayton.edu/engineering/areas\_of\_study.php

As part of the requirements for the CME degree, the following electives can be used  
to satisfy a minor.

Chemistry/Biology Elective 3 credit hours

Chemical Engineering Elective 3 credit hours

Engineering/Science Elective 3 credit hours

Engineering/Science Elective 3 credit hours

**Bioengineering (BIE)**

Description: This is open to chemical, civil, computer, electrical, and mechanical   
engineering majors. The program is designed to expose the student to the use of engineering principles in the biological systems and applications.

**Two required courses:**

BIO 151 Concepts of Biology I **-OR-**

BIO 152 Concepts of Biology II

CME 490/590 Introduction to Bioengineering

**Select one course from:**

CME 491/591 Biomedical Engineering

MEE 530 Biomechanical Engineering

**One of the following electives:**

BIO 151 Concepts of Biology I

BIO 152 Concepts of Biology II

BIO 312 General Genetics

BIO 403 Physiology I

BIO 411 General Microbiology

BIO 440 Cell Biology

CHM 420 Biochemistry

CHM 451 General Biochemistry I

CHM 452 General Biochemistry II

CME 491/591 Biomedical Engineering

CME 492 Chemical and Bio Sensors  
MEE 530 Biomechanical Engineering

**Energy Production Engineering**Description: This minor is open to other engineering majors. The minor is for students with an interest in energy production.

Students receiving a minor in Energy Production Engineering will be required to take four required courses from the list below:

CME486/586 Introduction to Petroleum Engineering

CME 533/BIE 533/RCL 533 Biofuel Production Processes

CME 524/MEE 524/RCL 524 Electrochemical Power

CHM 234/GEO 234 Energy Resources

MEE 473/573/RCL 573 Renewable Energy Systems

MAT 579 Materials for Advanced Energy Applications

ECE 316 Introduction to Electrical Energy Systems

RCL 590 Thermal Systems Analysis

RCL 590 Solar Energy Engineering

RCL 590 Wind Energy Engineering

ECE/RCL/MAT 583 Advanced Photo-voltaics

**Composite Materials Engineering (CMA)**

Description: This minor is open to civil, chemical, and mechanical engineering majors. The program is designed to expose the student to the design, processing, and characterization of composite materials and their various applications in industry.

Students receiving a Composite Materials Engineering Minor will be required to take four courses total – two required courses and two electives. The required courses and electives are listed below.

**Two Required Courses** CME/MAT 510 High Performance Thermostat Polymers  
 CME 512/MAT 542 Advanced Composite Materials and Processing

**Choose two electives from the list below:**

CME/MAT 509 Introduction to Polymer Science - Thermoplastics

CME/MAT 527 Methods of Polymer Analysis

CEE/MAT 540 Composite Design  
CEE/MEE 546` Finite Element Analysis I

CEE/MAT 543 Analytical Mechanical-Composite Materials  
CME/MAT 580 Polymer Decomposition, Degradation, and Durability

**Environmental Engineering (EVE)**

Description: This minor, which is open to all non-civil engineering majors. The program defines  
contemporary problems of pollution and identifies the technological approaches necessary to preserve the quality of our environment.

Any four of the following not already required. It is recommended the minor include  
one course pertaining to water, air, and solid.

CEE 434 Water & Wastewater Engineering

CME/CEE 562 Physical & Chemical Water & Wastewater Treatment Processes CME/CEE 563 Hazardous Waste Engineering

CME/CEE 564 Solid Waste Engineering   
 CME 565 Fundamentals of Combustion

CME/CEE 574 Fundamentals of Air Pollution Engineering I

CME/CEE 575 Fundamentals of Air Pollution Engineering II

CME/CEE 576 Environmental Engineering Separation Processes

CHM 341 Environmental Chemistry

**Pre-Med Preparation for Engineering Students:**

The courses required by the majority of medical schools include:

**Note**: See a pre-med adviser for further approval

BIO 151 Concepts of Biology I: Cell and   
 Molecular Biology 3 Cr. Hrs.  
 BIO 151L Biological Laboratory Investigations I: Cell

Molecular Biology 1 Cr. Hr.

BIO 152 Concepts of Biology II: Evolution and

Ecology 3 Cr. Hrs

BIO 152L Biological Laboratory Investigations II:

Evolution and Ecology 1 Cr. Hr.

CHM 123 and 123L\* General Chemistry I and Lab 4 Cr. Hrs.

CHM 124 and 124L\* General Chemistry II and Lab 4 Cr. Hrs.

PHY 206\* General Physics I 3 Cr. Hrs.

PHY 207\* General Physics II 3 Cr. Hrs.

PHY 201L\* General Physics Laboratory 1 Cr. Hr.

(A higher level engineering lab may be substituted.)

CHM 313 and 313L\* Organic Chemistry I and Lab 4 Cr. Hrs.

CHM 314 and 314L\* Organic Chemistry II and Lab 4 Cr. Hrs.

2 semesters of ENG\* Take CAP Art study ENG if took ENG 3 Cr. Hrs.

\* Already part of the CME sequence

It is recommended that a student take a course in physiology and a course in microbiology.

For Chemical Engineering Students:

CHM 420 Biochemistry 3 Cr. Hrs.

BIO 403 Physiology 3 Cr. Hrs.

BIO 411\*\* General Microbiology 3 Cr. Hrs.

BIO 312\*\* General Genetics 3 Cr. Hrs.

\*\*Recommend to take BIO 411 or BIO 312 or both if possible

**Materials Engineering (MAT)**

Description: This minor is open to all engineering majors. This minor is a general overview of materials with elective courses in polymers, composites, nanomaterials, and   
 material characterization.

Students receiving a Materials Engineering Minor will be required to take four courses total – two required courses and two electives. The required courses and electives are listed below.  
  
 **Two Required Courses:**

MAT 501 Principles of Materials I

MAT 502 Principles of Materials II

**Choose two electives from the list below:**

MAT 504 Techniques of Materials Analysis  
 MAT 506 Mechanical Behavior of Materials

MAT 507 Introduction to Ceramic Materials

MAT 508 Principles of Material Selection

CME 509/MAT 509 Introduction to Polymer Science - Thermoplastics

CME 510/MAT 510 High Performance Thermostat Polymers

CME/MAT 511 Principles of Corrosion  
 MAT 521 Nondestructive Evaluation

CME/MAT 527 Methods of Polymer Analysis  
 CME/MAT 528 Chemical Behavior of Materials

CME 512/MAT 542 Advanced Composites  
 MAT 535 High Temperature Materials

MAT 541 Experimental Mechanics of Composite Materials

MAT 543 Analytical Mechanics of Composite Materials

MAT 544 Mechanics of Composite Structures  
 MAT 575 Fracture and Fatigue of Metals and Alloye I  
 MAT 577 Light Structural Metals

CME/MAT 579 Materials for Advanced Energy Applications  
 CME/MAT 580 Polymer Durability

MAT 590 Selected Readings in Materials Engineering

MAT 595 Special Problems in Materials Engineering  
 MAT 601 Surface Chemistry of Solids

MAT 604 Nanostructured Materials

MEE 312 Engineering Materials I

**Polymer Materials (PME)**

Description: This minor is open to all engineering majors. Coverage of polymers including thermosets and thermoplastics and composite materials in which polymers are used as constituents. Methods of polymer processing and polymer characterization are also included.

Students receiving a Polymer Materials Minor will be required to take four courses total – two required courses and two electives. The required courses and electives are listed below

**Two Required Courses**:

CME/MAT 509 Introduction to Polymer Science - Thermoplastics CME/MAT 510 High Performance Thermostat Polymers

**Select two of the following courses**:

CME/MAT 527 Methods of Polymer Analysis

CME/MAT 528 Chemical Behavior of Materials

MAT 540 Composite Design

CME 512/MAT 542 Advanced Composites

MAT 543 Analytical Mechanics of Composite Materials  
 CME/MAT 580 Polymer Durability

**Concentration in Energy Systems**

Description: The Energy Systems Concentration provides an interdisciplinary concentration in energy systems and its social consequences. Students completing this concentration would find themselves prepared for jobs in both industrial and building energy systems, the market for which has been growing rapidly.

Students in the Energy Systems Concentration would be required to take the following courses:

**Core CME Courses**

CME 203 – Materials and Energy Balances

CME 311 – Chemical Engineering Thermodynamics

CME 324/325/326L – Transport Phenomena I, II and lab

CME 465 – Fluid Flow and Heat Transfer

CME 466L – Unit Operations Lab

CME 430/431 – Design I and II

**CME Elective (Choose 1 from the list below)**

CME 486/586 – Petroleum engineering

CME 524/MEE 575 – Fundamentals and Applications of Fuel Cells

CME 565 – Fundamentals of Combustion

CME 574 – Fundamentals of Air Pollution Engineering I

**Technical Electives (Choose 2 of the following if not chosen for CME elective)**

CME 486/586 – Petroleum engineering

CME 524/MEE 575 – Fundamentals and Applications of Fuel Cells

CME 565/MEE 560 – Fundamentals of Combustion

CME 574 – Fundamentals of Air Pollution Engineering

MAT 590 – Energy Materials

MEE 420/569 – Energy Efficient Buildings

MEE 471/571 – Design of Thermal Systems

MEE 474/574 – Energy Efficient Manufacturing

MEE 472/572 – Renewable Energy Systems

CME 507/MEE 511 – Advanced Thermodynamics

MEE 413/513 – Propulsion

AEE/MEE 565 – Advanced Propulsion Systems

MEE 590 – Aviation and Jet Fuels

**The students must in addition to an Ethics course take**

ASI 320 – Cities and Energy (satisfies History requirement) or other approved humanities elective connected to Energy Systems



**REQUEST FOR APPROVAL OF A MINOR**

**UNIVERSITY OF DAYTON**

**SCHOOL OF ENGINEERING**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student ID No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

School of Engineering Major \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title of Minor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| ***Course Number*** | ***Course Title*** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

If it is necessary or desirable to change the minor program of study, a separate sheet must be submitted for approval by the Associate Dean. Courses will be verified on student’s DegreeWorks at time of graduation.

Remarks:

Approval:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Adviser Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chair of School of Engineering Department Offering the Minor Date



**REQUEST FOR APPROVAL OF A CONCENTRATION**

**UNIVERSITY OF DAYTON**

**SCHOOL OF ENGINEERING**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student ID No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

School of Engineering Major \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title of Concentration \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| ***Course Number*** | ***Course Title*** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

If it is necessary or desirable to change the concentration, a separate sheet must be submitted for

approval by the Associate Dean. Courses will be verified on student’s DegreeWorks at time of graduation.

Remarks:

Approval:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Adviser Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chair of School of Engineering Department Offering Date

the Concentration

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Associate Dean Date

Rev. 8/13

**UNIVERSITY OF DAYTON**

## “MBA-READY”

## ENGINEERING PROGRAM SUMMARY

Have you considered the advantages of having an Engineering degree PLUS a Masters degree in Business Administration? This is one of the most marketable degree combinations today.

By planning your engineering program properly you can meet all of the prerequisites for the UD MBA program, and be “MBA-Ready” at graduation time. There is no wasted time, money, or effort!

* The “MBA-Ready” engineering program is a coordinated effort between the School of Engineering and the School of Business to make it possible for a graduating engineer to go directly into the UD MBA program having met all of the business foundation requirements and ready to complete the MBA with one year of MBA course work.
* The “MBA-Ready” Program is designed for engineering students who want to pursue an MBA degree immediately upon completion of their undergraduate program.
* Completion of the “MBA-Ready” Program will qualify for a minor in Business.
* It will also fulfill all UD MBA pre-requisites prior to entrance into the UD MBA program.
* If you complete the MBA-Ready program you will receive an undergraduate minor in Business Administration.
* Completing the coursework does not guarantee admission into the MBA program. You must complete the GMAT examination and apply to the MBA program.
* Students must receive a minimum grade of C- in all of the above listed MBA foundation classes.
* Please schedule a meeting with the MBA graduate office in Mirial Hall 306 prior to taking any MBA classes.

If you are interested in the MBA Ready Program, please contact:

Janet Leonard

Senior Academic Advisor

School of Business Administration

Miriam Hall Room 211

(937) 229-2259

Janet.Leonard@notes.udayton.edu

MBA READY PROGRAM REQUIREMENTS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Course | Prerequisites | Title | Term | Credits |
| MGT 301 | JR | Organizational Behavior | Fall/Winter/Summer | 3 |
| ECO 300  Or  ECO 203 &204 | MTH 168 & EGR Student | Micro & Macro Economics | Winter | 3  3/3 |
| ACC 300 A&B or  ACC 207 &  ACC 208 | Soph/EGR  Student  Soph/BAI 103L | Financial & Managerial  Accounting | Fall/Winter | 4  3  3 |
| FIN 301 | JR, ECO 300  A&B, ACC 300  or ACC 207 & 208 (co-req)  and ECO 203 | Business Finance | Fall/Winter/Summer | 3 |
| MBA 610 or DSC 210 or MTH 207 | SR  Calculus | Stat. Tech. for Decision Analysis | Fall/Summer | 1.5  3 |
| MBA 611 or  DSC 211 | MBA 610 or DSC 210 or  MTH 207 | Stat. Tech for Decision Analysis | Fall/Summer | 1.5  3 |
| MBA 630/ MKT300/MKT 301 | SR | Marketing Essentials | Winter/Summer | 1.5  3 |
| MBA 650 | SR | Organizations and their  Environments | Winter/Summer | 1.5  3 |
| MBA 660/MIS 300/MIS 301 | SR | Information Technology &  Systems | Fall/Winter | 1.5  3 |
| MBA 612/OPS 300/OPS 301 | MBA 610 & 611 or DSC 210 &  211, SR | Manufacturing and Service  Systems | Fall/Winter | 1.5  3 |

**EGR-MBA Ready Programs**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Bachelor of Chemical Engineering** | | | | | | | | | | | | Notes |
| The Ideal Program | | | | | | | | | |  |  |  |
| F1 | W1 | F2 | W2 | S2 | F3 | W3 | S3 | F4 | W4 | V1.1 | Course Title |  |
| 1 |  |  |  |  |  |  |  |  |  | CME 101 | Intro to Chem. Engineering |  |
| 2 |  |  |  |  |  |  |  |  |  | EGR 103 | Engineering Innovation |  |
| 3 |  |  |  |  |  |  |  |  |  | XXX.XXX | Humanities Base |  |
| 0 |  |  |  |  |  |  |  |  |  | EGR 100 | Engineering Workshops |  |
| 4 | 4 |  |  |  |  |  |  |  |  | MTH 168-169 | Analytic Geometry & Calculus I, II |  |
| 4 | 4 |  |  |  |  |  |  |  |  | CHM 123-124 | General Chemistry I,II and Labs |  |
| 3 | 3 |  |  |  |  |  |  |  |  | ENG 101-102 | College Composition I, II |  |
|  | 3 |  |  |  |  |  |  |  |  | PHY 206 | General Physics |  |
|  | 3 |  |  |  |  |  |  |  |  | XXX.XXX | Humanities Base |  |
|  | 1 |  |  |  |  |  |  |  |  | CMM XXX | Fundamentals of Communication |  |
|  |  | 4 | 4 |  |  |  |  |  |  | CHM 313-314 | Organic Chemistry I, II & Labs |  |
|  |  | 0 | 0 |  |  |  |  |  |  | CME 200 | Professional Development Seminar |  |
|  |  | 3 |  |  |  |  |  |  |  | CME 203 | Material & Energy Balances |  |
|  |  | 4 |  |  |  |  |  |  |  | MTH 218 | Analytical Geometry and Calculus III |  |
|  |  | 3 |  |  |  |  |  |  |  | XXX.XXX | Humanities Base |  |
|  |  | 3 |  |  |  |  |  |  |  | EGR 202 | Engineering Thermodynamics |  |
|  |  |  | 3 |  |  |  |  |  |  | PHY 207 | General Physics II |  |
|  |  |  | 3 |  |  |  |  |  |  | CME 281 | Chemical Engineering Computations |  |
|  |  |  | 3 |  |  |  |  |  |  | MTH 219 | Applied Differential Equations |  |
|  |  |  | 1 |  |  |  |  |  |  | CMM XXX | Fundamentals of Communication |  |
|  |  |  | 3 |  |  |  |  |  |  | XXX.XXX | GEN ED Electives |  |
|  |  |  |  | 3 |  |  |  |  |  | MGT 301 | Organizational Behavior |  |
|  |  |  |  | 3 |  |  |  |  |  | ECO 300 | Micro, & Macro Economics | GE El. |
|  |  |  |  |  | 3 |  |  |  |  | CME 311 | Chemical Engineering Thermodynamics |  |
|  |  |  |  |  | 3 |  |  |  |  | CME 381 | Applied Mathematics for Chemical Engineers |  |
|  |  |  |  |  | 1 |  |  |  |  | CMM XXX | Fundamentals of Communication |  |
|  |  |  |  |  | 3 |  |  |  |  | EGR 201 | Engineering Mechanics |  |
|  |  |  |  |  | 3 | 3 |  |  |  | XXX.XXX | GEN ED Elective |  |
|  |  |  |  |  | 3 | 3 |  |  |  | CME 324-325 | Transport Phenomena I, II |  |
|  |  |  |  |  |  | 3 |  |  |  | CME 306 | Chemical Reaction Kinetics & Eng. |  |
|  |  |  |  |  |  | 2 |  |  |  | CME 326L | Transport Phenomena Lab |  |
|  |  |  |  |  |  | 3 |  |  |  | CME 365 | Separation Processes |  |
|  |  |  |  |  |  | 4 |  |  |  | ACC 300A,B | Financial and Managerial Accounting |  |
|  |  |  |  |  |  |  | 3 |  |  | FIN 301 | Business Finance |  |
|  |  |  |  |  |  |  | 1.5 |  |  | MBA 611 | Stat. Tech. for Decision Analysis |  |
|  |  |  |  |  |  |  |  | 3 | 3 | CME 430-431 | Chemical Engineering Design I, II |  |
|  |  |  |  |  |  |  |  | 3 |  | CHM/BIO.zzz | Chemistry/Bio Elective |  |
|  |  |  |  |  |  |  |  | 3 |  | CME 452 | Process Control |  |
|  |  |  |  |  |  |  |  | 3 |  | CME 465 | Flow and Heat Transfer Processes |  |
|  |  |  |  |  |  |  |  | 2 |  | CME 466L | Chemical Engineering Unit Ops Lab |  |
|  |  |  |  |  |  |  |  |  | 2 | CME 453L | Process Control Lab |  |
|  |  |  |  |  |  |  |  |  | 3 | CME XXX | Chemical Engineering Elective |  |
|  |  |  |  |  |  |  |  | 0/1 | 0/1 | CME 408 | Chemical Engineering Seminar |  |
|  |  |  |  |  |  |  |  | 3 |  | XXX.XXX | GEN ED Elective |  |
|  |  |  |  |  |  |  |  |  | 3 | XXX.XXX | GEN ED Elective |  |
|  |  |  |  |  |  |  |  |  | 1.5 | MBA 630 | Marketing Essentials |  |
|  |  |  |  |  |  |  |  |  | 1.5 | MBA 650 | Organizations and their Environments |  |
|  |  |  |  |  |  |  |  |  | 1.5 | MBA 660 | Information Technology & Systems |  |
|  |  |  |  |  |  |  |  |  | 1.5 | MBA 612 | Manufacturing and Service Systems |  |
| 17 | 18 | 17 | 17 | 6 | 16 | 18 | 4.5 | 17 | 18 |  |  | Total Cr. Hrs. 148.5 |

SCHEDULE FOR COMPLETION OF MBA PROGRAM ONCE   
FINISHES WITH MBA READY PROGRAM

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Senior | | 5th Year | | |
|  | FALL | WINTER | SUMMER\*\* | FALL | SPRING |
| Undergrad Courses | Undergrad  Courses | MBA  foundations |  |  |  |
| MBA Electives |  |  | 1 MBA Elective | 2 MBA Elective | MBA  Elective |
| MBA Core Courses |  |  | 2 MBA  Cores | 1 MBA  Core | 1 MBA  Core |
| Capstones |  |  |  | MBA 698 | MBA 699 |
| Total Hrs. | 17 | 17 | 9 | 12 | 9 |

\* Once completed, students have also earned a minor in Business Administration.

**PRINT LEGIBLY IN BLUE/BLACK INK \* FORM WILL BE READY TO PICK UP FROM THIS OFFICE IN 5 BUSINESS DAYS\***

**PRINT LEGIBLY IN BLUE/BLACK INK \* FORM WILL BE READY TO PICK UP FROM THIS OFFICE IN 5 BUSINESS DAYS\***

***School of Engineering Dean’s Office***

300 College Park, Dayton, OH 45469-0254

(937) 229-2736 Fax (937) 229-2756

## TRANSIENT STUDENT CERTIFICATION

***for UNDERGRADUATE students***

**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name:** |  | **College/University you plan to attend:** |  |
| **Address:**  **(Home address)** |  | **City, State** |  |
| **City, ST, ZIP** |  | **TERM TO BE TAKEN (ex: Summer 2015):** |  |
| **Student ID** |  | **EMAIL ADDRESS:** |  |
| **MAJOR(s)** |  | **PHONE :** |  |

***Note to Student:***

1. You must complete this form, discuss this course(s) with your advisor or department chair, and check your DegreeWorks requirements.
2. You are currently enrolled at the University of Dayton as an undergraduate student.
3. You must have confirmation of courses being taught at your chosen school. A listing in the University catalog does not guarantee it will be taught during the semester. **ON-LINE COURSES WILL NOT BE ACCEPTED AS TRANSIENT COURSES.**
4. You must attach a copy of the course descriptions(s) of the courses you wish to take from the school you will be attending.
5. You are responsible to get the OFFICIAL transcript with the grade(s) posted from the above listed school mailed to the following UD address: ***University of Dayton, 300 College Park, Dayton, OH 45469-1668***upon completion of the course.
6. Transfer credit will not be granted for any course previously taken at the University of Dayton – including courses passed with final grade of “D”. Transfer credits will not replace a grade of a “D” or an “F” for a course taken at UD.
7. Transfer credit will not affect your University of Dayton cumulative grade point average.
8. **You will only receive transfer credit for courses that have a C- or better.**
9. ***By signing this form, you have read and completed all necessary steps.***

­­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Student Signature Advisor or Department Chair Signature***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COURSE(S) TO APPROVE**  (COMPLETED BY STUDENT) | | | | | **UD EQUIVALENT**  *(*COMPLETED BY STUDENT AND APPROVED BY ADVISOR OR DEPARTMENT CHAIR) | | | |
| **DEPT.** | **COURSE**  **NO.** | **COURSE TITLE** | **CR.**  **HRS.** | **DEPT.** | | **COURSE**  **NO.** | **COURSE TITLE** | **SEM**  **HRS.** |
|  |  |  |  |  | |  |  |  |
|  |  |  |  |  | |  |  |  |
|  |  |  |  |  | |  |  |  |
|  |  |  |  |  | |  |  |  |
|  |  |  |  |  | |  |  |  |

**Please attach a copy of the course description for each course listed above.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *Associate Dean*  *Date*

**Note to Transient Registrar:** The above-named student is in good standing at the University of Dayton, has at least a 2.00 cumulative average, and has permission to attend college or university as a transient student for term and year shown above.

**~\*~For approval, this form needs to taken to the School of Engineering Dean’s Office to be reviewed and signed by the Associate Dean– Kettering Lab 564 \*~\* (revised 11/14)**

### MODIFY/WAIVE FORM PROCESS MODIFY FORMS:

1) Student discusses with advisor/dept. chair the courses to be modified.

2) Student completes the modify form and submits it to the department chair for approval and signature. The department makes copy of signed form for office file.

3) Original signed modify form is submitted to the Dean’s Office.

4) Student’s advising report is run and submitted to the Assistant Dean with the original modify form.

5) Assistant Dean reviews submitted modify form with advising report and approves or provides other instruction on the form.

6) The Assistant Dean approves and signs the form and returns it to the Dean’s Office Admin. to be updated in the Colleague or DegreeWorks system.

7) A copy of the approved, signed modify form is sent to the dept.

8) If the form is not approved, a copy is made and kept in the Dean’s Office. The original form is returned to the dept. for review, update and resubmission.

9) The student, dept. chair, dept. admin., and Registrar Office are emailed of update on student’s file of approved changes. Student may view the change on the WebAdvisor website or the DegreeWorks website.

10) The original signed (approved) modify form is filed in the student’s file in the Dean’s Office.

WAIVE FORMS:

1) Student discusses with advisor/dept. chair the course to be waived.

2) Dept. chair creates and submits to the Dean’s Office the signed waive form with necessary documentation (if required). The department makes copy of signed form for office file.

3) Student’s advising report is run and submitted to the Assistant Dean with the waive form.

4) Assistant Dean reviews submitted waive form with advising report and approves or provides other instruction on the form.

5) The Assistant Dean signs waive form and returns to the Dean’s Office Admin. to be updated in the University Colleague or DegreeWorks system.

6) A copy of the signed waive form is sent to the dept.

7) If the form is not approved, a copy is made and kept in the Dean’s Office. The original form is returned to the dept. for review, update and resubmission.

8) The student, dept. chair, dept. admin., and Registrar Office are emailed   
 of update on student’s file. Student may view the change on the

WebAdvisor website or the DegreeWorks website.  
9) The original signed waive form is filed in student’s file in the Dean’s Office.

## DROP/ADD PROCESS WITH REGISTRATION

DROP/ADD FORMS: (See Front of the Term Composite for Dates Needed for Signatures)

1. The student completes original drop/add form for course change(s).

2. The form is submitted to his/her dept. office for advisor or dept. chair approval and signature.

3. Required advisor, instructor and Dean’s signatures are acquired as the composite calendar for the term dictates.

4. The student should take the drop/add form to the Registration Office to be processed if not over 17 credit hours (student must have completed 45 credit hours before the registration date). If over 17 credit hours, the Assistant Dean’s signature is required.

5. Permission Classes (identified by “P” in the Remarks column on the composite require

permission of the department chairperson or faculty assigned for that class before the beginning of the term. That is, PHL 103 closed course should be taken to the PHL Department for signature.

6. Closed classes require the Chairperson’s signature of the department which the course is

offered.

7. Change of Grading Option requires the advisor or dept. chair’s signature on the drop/add form.

8. Check the current term composite or on-line for important dates each term: Last day for Adds, Course Changes, Section Changes, Late Registration; Last day to DROP without record; To drop during the drop with W period (W will be entered beside the class on your transcript and permanent academic record); After the final day – If any student wishes to drop after this date, it is an Exception and requires the approval of the Dean’s Office who would then consult with the instructor.

9. The student may view their schedule on-line (WebAdvisor or DegreeWorks).

|  |  |
| --- | --- |
| UNIVERSITY OF DAYTON  SCHOOL OF ENGINEERING | REQUEST TO MODIFY PROGRAM OF STUDY |

This form is used to request a modification of a School of Engineering program of study. The decision on the request will be mailed to the student.

This section is to be completed by the student and then brought to the Department Chairperson for review and recommendation to the Dean of Engineering.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *SSN* |  |  |  |  | *-* |  |  | *-* |  |  |  |  |  | *Department* |  |

|  |  |  |  |
| --- | --- | --- | --- |
| *Last Name* |  | *First Name* |  |

I wish to substitute \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

in place of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Please explain why this request is being made.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Student’s Signature Date*

The Department Chairperson should comment on the validity of the student’s request and provide reasons why it should be approved. Please forward this form to the Office of the Dean of Engineering.

|  |  |  |  |
| --- | --- | --- | --- |
|  | I recommend approval of this request. |  | I do not recommend approval of this request. |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Chairperson’s Signature Date*

|  |  |  |  |
| --- | --- | --- | --- |
|  | I approve this request. |  | I do not approve this request. |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Associate Dean for Undergraduate Program’s Signature Date*

## Approved Technical Elective Classes

Revised 8/15

\* Selection of technical electives is an important decision affecting minors and preparation for jobs and graduate school. Students are strongly advised to consult with a CME academic advisor to discuss the options and constraints that apply to their situation.

\* Chemical Engineering courses, Engineering courses, and Science courses can be used as technical electives

\* The Engineering/Science classes can be used to complete a minor.

\* Engineering Technology classes **cannot** be accepted as engineering/science requirement.

\* Honors Thesis (CME 493 or CME 494) can be used as technical elective. Engineering Systems Design Seminar (EGR 320) cannot be used for an engineering/science requirement.

\* **PHY 250 Descriptive Astronomy does not count as a technical elective.**

**\*** Most common classes taken are in bold letters. Pre-requisites to courses are in

parentheses.

**Chemical Engineering**

Any course that is not a required class can be taken.

**CME 409 Introduction to Polymer Science – Thermoplastics   
 (CME 311, CHM 314)  
CME 410 High Performance Thermoset Polymers (Organic Chemistry), permission of instructor**

**CME 412 Advanced Composites (CME 409 or CME 509 or MAT 501 or**

**consent of instructor)**

**CME 429 Computational Chemistry and Molecular Simulations   
CME 432 Chemical Product Design**

**CME 486 Introduction to Petroleum Engineering**

**CME 489 Principles of Biology for Beioengineers**

**CME 490 Introduction to Bioengineering (CME 324, CME 306 co-req)**

**CME 491 Biomedical Engineering   
CME 492 Chemical Sensors & Biosensors**

CME 499 Special Problems

CME 507 Advanced Thermodynamics

**CME 509 Introduction to Polymer Science - Thermoplastics   
 (College Chemistry; physics and differential equations)**

CME 510 High Performance Thermoset Polymers (Background in differential equations, organic or physical chemistry, or CME 509)

**CME 511 Principles of Corrosion (MAT 501)**

**CME 512 Advanced Composites (MAT 501, MAT 509 or perm of instructor)**

CME 515 Statistical Thermodynamics (CME 311, MTH 219)

CME 521 Advanced Transport Phenomena

CME 524 Electrochemical Power

CME 526 Polymer Engineering (CME 510 or consent of instructor)

CME 527 Methods of Polymer Analysis (CME 509, 510 or consent of instructor)  
CME 528 Chemical Behavior of Materials (CHM 123 or permission of instructor)

CME 529 Computational Chemistry and Molecular Simulations

**CME 532** **Chemical Product Design (CME 311, 324 or consent of instructor)**

**CME 530 Biomaterials**CME 533 Biofuel Production Processes (EGR 202; CHM 123 or consent of

instructor)

CME 541 Process Dynamics

CME 542 Chemical Engineering Kinetics (CME 306 and CME 381 or equivalent)

CME 543 Chemical Reactor Analysis and Design (CME 306 & CME 381 or

equivalent)

CME 550 Agitation (CME 412 or consent of instructor)

CME 560 Biological Processes in Wastewater Engineering

CME 562 Physical and Chemical Wastewater Treatment Processes (CHM 123 and

CME 411 or consent of instructor)

CME 563 Hazardous Waste Engineering (CHM 123 and CME 411 or consent of

instructor)

CME 564 Solid Waste Engineering (CHM 123 and CME 411 or consent of

instructor)

CME 565 Fundamentals of Combustion (CME 311, CME 306 or consent of instructor)

CME 566 Advanced Separations (CME 365 or equivalent or consent of

Instructor)

CME 574 Fundamentals of Air Pollution Engineering I (CME 311, CME 324

or consent of instructor)

CME 575 Fundamentals of Air Pollution Engineering II (CME 574 or consent of

of instructor)   
CME 576 Environmental Engineering Separation Processes  
CME 579 Materials for Advanced Energy Application  
CME 580 Polymer Decomposition, Degradation, and Durability

CME 582 Advanced Chemical Engineering Calculations II

CME 583 Process Modeling (CME 582 or equivalent)  
CME 586 Introduction to Petroleum Engineering

CME 590 Introduction to Bioengineering

CME 591 Biomedical Engineering

CME 592 Chemical Sensors and Biosensors

CME 595 Special Problems in Chemical Engineering

**Bioengineering**

BIE 529 Computational Chemistry and Molecular Simulations (CHM 124 or   
 consent of instructor)

BIE 530 Biomaterials

BIE 533 Biofuel Production Processes (EGR 202; CHM 123 or consent of

instructor)

BIE 560 Biological Processes in Wastewater Engineering ( CHM 124)

BIE 561 Biomedical Engineering I (BIO 151 and CME 324) or BIE 501 or

permission of instructor

**Biology**

**BIO 151 Concepts of Biology I: Cell and Molecular Biology**

BIO 152 Concepts of Biology II: Evolution and Ecology (BIO 151 suggested)

BIO 312 General Genetics (BIO 152)

BIO 350 Applied Microbiology (BIO 152, CHM 314)

BIO 403 Physiology I (BIO 152, CHM 314)

BIO 404 Physiology II (BIO 403)

BIO 411 General Microbiology (BIO 152, CHM 313)

BIO 415 Neurobiology (BIO 152, CHM 124)

BIO 440 Cell Biology (BIO 152, CHM 314)

BIO 462 Molecular Biology (BIO 312, CHM 314)

**Chemistry**

Any course that has CHM 124 as a prerequisite.

**CHM 201 Quantitative Analysis (CHM 124, 124L; Concurrent with CHM 201L)**

**CHM 201L Quantitative Analysis Lab** CHM 234 Energy Resources Prerequisite(s): CHM 123, CHM 124

CHM 303 Physical Chemistry (CHM 201 or equivalent; co-requisite

MTH 218; Concurrent with 303L)

CHM 303L Physical Chemistry Lab

CHM 304 Physical Chemistry

CHM 304L Physical Chemistry Lab (MTH 218 co-requisite)

CHM 341 Environmental Chemistry (CHM 314 or permission of instructor)  
 CHM 341L Environmental Chemistry Lab (Co-requisite CHM 341)

CHM 415 Analytical Chemistry (CHM 201, 201L, 302 or 304;

Concurrent with 415L)

CHM 415L Analytical Chemistry Lab (CHM 201L, CHM 302 or equivalent)

CHM 417 Inorganic Chemistry (CHM 124, 314; co-requisite CHM 302 or 304)

CHM 418L Inorganic Chemistry Laboratory (CHM 201L, 314L;

co-requisite CHM 417)

**CHM 420 Biochemistry (CHM 314)**

CHM 427 Medicinal Chemistry (CHM 314 and CHM 420 or CHM 451)

CHM 451 General Biochemistry I (CHM 201, 314)

CHM 452 General Biochemistry II (CHM 451)

CHM 462L Biochemistry Laboratory (CHM 420 or 451  
CME 528 Chemical Behavior of Materials

**Civil & Environmental Engineering**

CEE 213 Surveying

CEE 214 Highway Geometrics

CEE 215L Surveying Field Practice

CEE 311L Civil Engineering Materials Laboratory

CEE 312 Geotechnical Engineering

CEE 312L Geotechnical Engineering Laboratory

CEE 313 Hydraulics

CEE 313L Hydraulics Laboratory

CEE 316 Analysis of Structures I

CEE 333 Water Resources Engineering

CEE 403 Transportation Engineering

CEE 411 Design of Steel Structures

CEE 412 Design of Concrete Structures

CEE 421 Construction Engineering

CEE 422 Design and Construction Project Management

CEE 434 Water and Wastewater Engineering

CEE 434L Water & Wastewater Engineering Laboratory

CEE 450 Civil Engineering Design

CEE 463 Hazardous Waste Engineering

**Computer Science**

CPS 132 Computer Programming for Engineering and Science

(Co-requisite MTH 168)

**CPS 150 Algorithm & Programming I (4 credit hour)**

CPS 151 Algorithm & Programming II (4 credit hour, CPS 150)

CPS 250 Introduction to Computer Organization (CPS 151)

CPS 346 Operating Systems I (CPS 250, 350)

CPS 350 Data Structures & Algorithms (CPS 151)

**CPS 353 Numerical Methods I (MTH 169, CPS 132 or 150)**

**Electrical and Computer Engineering**

Any course that is not a required class can be taken.

ECE 201 Circuit Analysis (MTH 138 or 168, Concurrent with ECE 201L)  
 **ECE 204 Electronic Devices (EGR 203; Co-Req ECE 204L)** ECE 215 Introduction to Digital Systems (EGR 203; Co-Req ECE 215L)

ECE 303 Signals and Systems (ECE 204; MTH 218; Co-Req ECE 303L)

ECE 304 Electronic Systems (ECE 303; Co-req ECE 304L)

ECE 314 Fundamentals of Computer Architecture (CPS 150;

ECE 215; Co-Req ECE 314L)

ECE 401 Communication Systems (ECE 304; 340; Co-req ECE 401L)

ECE 401L Communication Systems Lab (ECE 304; Co-Req ECE 401)

ECE 414 Electro-Mechanical Devices (ECE 303, ECE 332)

**Engineering Mechanics**

EGM 202 Dynamics (EGR 201)

**EGM 303 Strength of Materials (EGR 201)**

EGM 445 Finite Element Applications (EGM 303, MTH 219)

**Geology**

GEO 115 Physical Geology

GEO 208 Environmental Geology (GEO 109 or 115, permission of instructor)

**GEO 218 Engineering Geology**

GEO 309 Surface and Groundwater Hydrology (GEO 109 or GEO 218 or

permission of instructor)

GEO 412 Introductory Geochemistry (GEO 201, or permission of instructor)

**Industrial and Systems Engineering**

**ISE 300 Probability and Statistics for Engineers (MTH 218)**

ISE 411 Problem Solving and Decision Making

ISE 430 Engineering Economy (MTH 218 not recommended; covered in Design I)

ISE 441 Production Engineering (CPS 132; ISE 300 or MTH 167)

ISE 455 Systems Dynamics (MTH 368 or ISE 369; CPS 132)  
ISE 460 Quality Assurance (ISE 300 or MTH 367; CPS 132)

ISE 461 Design and Analysis of Experiments (CPS 132, ISE 300, MTH 367)

ISE 465 Reliability and Maintainability (MTH 367 or ISE 300; CPS 132)

**Mathematics**

MTH 310 Linear Algebra and Matrices (MTH 308, MTH 218 or perm of instructor)

**MTH 367 Statistical Methods I (MTH 149, or 169)**

MTH 368 Statistical Methods II (MTH 367)

MTH 403 Boundary Value Problems (MTH 219)

MTH 411 Probability and Statistics I (MTH 218, MTH 308)

MTH 412 Probability and Statistics II (MTH 411)

MTH 440 Introduction to Mathematical Modeling (MTH 219, 310 or permission of

instructor)

**Mechanical Engineering**

Any course can be taken.

Strength and Materials is a prerequisite for many of the classes so it is listed here.

**EGM 303 Strength and Materials (EGM 201)**MEE 312 Engineering Materials I (PHY 208, EGM 303, MEE 301 or

**permission)**

**MEE 313 Engineering Materials II (MEE 312 or permission of instructor)**

MEE 401 Aerodynamics (MEE 308)

MEE 402 Energy Conversion Systems (MEE 302 or CME 311 or MCT 232)

MEE 413 Propulsion

MEE 417 Internal Combustion Engines (MEE 301 or permission)

MEE 420 Energy Efficient Buildings

MEE 471 Design of Thermal Systems

MEE 473 Renewable Energy Systems

MEE 478 Energy Efficient Manufacturing

Physics

Any course that has PHY 206 as a prerequisite.

PHY 208 General Physics III - Mechanics of Waves

**Graduate Classes**

The following are acceptable graduate classes:

BIE 511 Biomaterials

BIE 529 Computational Chemistry and Molecular Simulations (CHM 124 or   
 consent of instructor)

BIE 533 Biofuel Production Processes (EGR 202; CHM 123 or consent of

instructor)

BIE 560 Biological Processes in Wastewater Engineering ( CHM 124)

BIE 561 Biomedical Engineering I (BIO 151 and CME 324) or BIE 501 or

permission of instructor   
CEE 546 Finite Element Analysis

CEE 560 Industrial/Domestic Waste Treatment

CEE 562\* Physical and Chemical Wastewater Treatment Processes

CEE 563 Hazardous Waste Treatment

CEE 564\* Solid Waste Engineering

CEE 580 Hydrology and Seepage (CIE 312, 313)

CEE 582 Advanced Hydraulics (CIE 313)

CME 507 Advanced Thermodynamics

**CME 509 Introduction to Polymer Science – Thermoplastics   
 (College Chemistry and Calculus)**

**CME 510 High Performance Thermoset Polymers (Background in differential**

**equations, organic or physical chemistry, or CME 509)**

**CME 511 Principles of Corrosion (MAT 501)  
 CME 512 Advanced Composites (MAT 501, MAT 509 or perm of instructor)**

CME 515 Statistical Thermodynamics (CME 311, MTH 219)

CME 521 Advanced Transport Phenomena (CME 324 or 381 or equivalent)

CME 524 Fundamentals and Applications of Fuel Cells

CME 525 Design of Macromolecular Systems (CHM 314; CME 510 or consent of instructor)

CME 526 Polymer Engineering (CME 510 or consent of instructor)

CME 527 Methods of Polymer Analysis (CME 509, 510 or consent of instructor)  
CME 528 Chemical Behavior of Materials (CHM 123 or permission of instructor)

CME 529 Computational Chemistry and Molecular Simulations

CME 530 Biomaterials

**CME 532 Chemical Product Design**

CME 533 Biofuel Production Processes

CME 541 Process Dynamics

**CME 542 Chemical Engineering Kinetics (CME 306 and CME 381 or**

**equivalent)**

CME 543 Chemical Reactor Analysis and Design (CME 306 and 381 or equivalent)

CME 550 Agitation

CME 560 Biological Processes in Wastewater Engineering

CME 562 Physical and Chemical Wastewater Treatment Processes (CHM 123 and

CME 411 or consent of instructor)

CME 563 Hazardous Waste Engineering (CHM 123 and CME 411 or consent of

instructor)

CME 564 Solid Waste Engineering (CHM 123 and CME 411 or consent of

instructor)

CME 565 Fundamentals of Combustion (CME 311, CME 306 or consent of instructor)

CME 566 Advanced Separations (CME 365 or equivalent or consent of

Instructor)

CME 574 Air Pollution Engineering I (CME 311 or MEE 301, 302; CME 324 or

MEE 410; or permission of instructor)

CME 575 Air Pollution Engineering II (CME 574 or permission of instructor)

CME 576 Environmental Engineering Separation Processes (Consent of instructor)   
 CME 579 Materials for Advanced Energy Application  
 CME 580 Polymer Durability

**CME 582 Advanced Chemical Engineering Calculations II**

CME 583 Process Modeling (CME 582 or equivalent)

CME 586 Introduction to Petroleum Engineering

CME 590 Introduction to Bioengineering (CME 324, CME 306)

CME 591 Introduction to Biomedical Engineering  
 CME 592 Chemical Sensors & Biosensors

CME 595 Special Problems in Chemical Engineering

ENM 541 Production Engineering (ENM 521 or permission of instructor)

**ENM 560 Quality Assurance (MSC 501 or equivalent)**

ENM 561 Design and Analysis of Experiments (MSC 501 or equivalent)

**ENM 575 Introduction to Artificial Intelligence**

ENM 577 Introduction to Expert Systems

**MAT 501 Principles of Materials I (MTH 219, college chemistry and physics)**

**MAT 502 Principles of Materials II (MAT 501 or equivalent)**

MAT 504 Techniques of Material Analysis (MAT 501 or permission of instructor  
 MAT 506 Mechanical Behavior of Materials (EGM 303 or permission of instructor)

MAT 507 Introduction to Ceramic Materials (MAT 501)

MAT 508 Principles of Material Selection (MAT 501 or permission of instructor)

MAT 521 Nondestructive Evaluation (Permission of Instructor)

MAT 526 Polymer Engineering (MEE 308, MEE 410, MAT 510)

MAT 527 Methods of Polymer Analysis (MAT 509, MAT 510)

MAT 529 Computational Chemistry and Molecular Simulations

MAT 530 Biomaterials

MAT 535 High-Temperature Materials (MAT 501 or equivalent)

**MAT 542 Advanced Composites (MAT 501, MAT 509, permission of instructor)** MAT 544 Mechanics of Composite Structures

MAT 570 Fracture Mechanics (MAT 506 or permission of instructor)

MAT 575 Fracture and Fatigue of Metals and Alloys I (MAT 501, MAT 506, or

permission of instructor)

MAT 576 Fracture and Fatigue of Metals and Alloys II (MAT 575 or equivalent)  
 MAT 577 Light Structural Metals  
 MAT 579 Materials for Adv Energy Applications (consent of instructor)  
 MAT 580 Polymer Durability

MAT 601 Surface Chemistry of Solids (MAT 501 or permission of instructor) MEE 530 Biomechanical Engineering

MEE 567 Solar Heating Analysis

MTH 547 Statistics for Experimenters (MTH 367 or equivalent)

**\* may be dropped or changed in the future.**

## Recommended Practical Ethical Action CAP Classes

Choose one 3 credit hour course that covers ethics.

PHL 312 Ethics

PHL 313 Business Ethics

PHL 315 Medical Ethics

PHL 316 Engineering Ethics

PHL 317 Ethics and Modern War

PHL 318 Family Ethics

PHL 319 Information Ethics

PHL 321 Environmental Ethics

REL 360 Christian Ethics

REL 365 Christian Ethics and the Environment

REL 367 Christian Ethics and Health Care Issues

REL 368 Christian Ethics and the Business World

REL 369 Christian Ethics and Engineering

## Retake Policy

If a student retakes a course in which the topics vary, it must be demonstrated that the retaken course contains the same material as the original course in which the student received a D or F. Courses taken by students prior to the initiation of this policy, and before completion of an undergraduate degree, may be retaken within the guidelines of this policy.

An undergraduate student who receives a grade of D or F in a course taken under Option 1 at the University of Dayton may retake that course under Option 1 at the University of Dayton and remove the original D or F from the cumulative GPA. When a course has been retaken and the subsequent grade is higher than or equal to the previous grade, the previous grade will not count towards the student's cumulative GPA. The transcript will reflect this event by noting the original grade with an "E" (Grade Excluded) and the term and cumulative GPA's will be adjusted. A student may have no more than 15 semester hours of "retaken" credit hours. Cumulative grade point averages will reflect the changes within 30 days after the grades are posted.

When a student retakes a course which he or she has taken more than once previously, the retaken course will serve to replace both previous grades (if it is the same as or higher than each). The number of "retaken hours" will be counted as the total hours for the two courses in which the grades are replaced; e.g., if a student retakes PSY 101 in which he or she had previously earned F two times, the new passing grade will replace both Fs, but will count as 6 retaken credit hours. This student will then be able to take up to 9 additional retaken credit hours.

Exceptions to this policy may be made by the dean (or the dean's designee) of the school or college in which the student is enrolled.

No grade changes of any kind are permitted after thirty days from the date listed on the grade report.

The University reserves the right to change the grading system.

## UD Web Sites

[**http://udayton.edu/engineering/chemical\_and\_materials/index.php**](http://udayton.edu/engineering/chemical_and_materials/index.php)

Chemical Engineering Department Home Page   
<http://bulletin.udayton.edu/index.jsp> -   
Undergraduate Bulletin Home Page

<http://bulletin.udayton.edu/bulletin.ud?v=31&g=0&pp=1000004528>  
Chemical Engineering Department Bulletin Home Page

<http://www.udayton.edu/engineering/index.php>

School of Engineering Home Page

http://www.udayton.edu/gened/  
General Education Information  
 <http://www.udayton.edu/gened/thematic_clusters/approved_cluster_courses.php>

Thematic Cluster Information

[www.udayton.edu/flyersfirst/registrar/](http://www.udayton.edu/flyersfirst/registrar/)

Flyers First (Registrar-Registration Office)

## UD Offices

Engineering Computing and Information Services

Kettering Lab Room 211 – 229-3171

Bursar’s Office – St. Mary’s Hall Room 105

229-4111

Computer Help Desk – Anderson Hall Room 28

229-3888

Registration - St. Mary’s Room 411

229-4141

Student Employment – First Floor  
Alumni House – L Street

229-3249

Health Center -- Gosiger Hall, Ground Floor

229-3131

Learning Teaching Center and Office of

Learning Resources

Roesch Library, Ground Floor

229-4898

Tech Shop --- Miriam Hall, Room 43

229-3573

Dining Services --- Powerhouse, Room 201

229-2441

## Co-op program, Internship and Honors

**The Co-op Program**

The co-op program integrates classroom study with employment related to the student's major. Practical work experience is gained ***before*** graduation - and in today's job market, that's a big advantage. Employers vary from small, local firms to multi-national corporations and government agencies and provide unique experiences to undergraduate students.

A student is generally eligible to begin the co-op program in their second semester of their sophomore year but no later than mid-junior year. The co-op program requires alternating semesters of full-time study and full-time work.

**Co-operative education allows students to --**

* define career goals and evaluate choices
* gain valuable work experience and meet professionals in their chosen field
* reinforce classroom learning
* evaluate an employer over a period of time
* assist in financing education
* improve opportunity for higher starting salary after graduation

**Applying to the Co-op Program . . .**

Requirements -

* Full-time status as a sophomore or junior undergraduate student at the University of Dayton
* Successful completion of CME 203
* Minimum grade point average - 2.3
* Serious intent to pursue the co-op option through preparation and interview process

Competitive interviews are offered both on campus and at employer work sites. The student makes the final decision whether or not to accept an offer for co-op employment

Visit the Co-operative Education Office located in the Kettering Labs - Room 266 or call 229-2335 (on campus just dial Ext. 92335). The engineering advisor is Nancy Chase. The web site address is

<http://careers.udayton.edu/students/co-op.asp>

**Internship**

Internship opportunities are also available and offer an alternative route to gaining work experience while still completing the degree program in four years. Visit the [careerservices@careers.udayton.edu](mailto:careerservices@careers.udayton.edu) .

**Honors Program**

**Requirements**

* For students pursuing the ***Honors*** diploma (thesis option), the 15 Honors credits may include at most 6 credit hours with any specific academic prefix. *For example, at most six credit hours of Honors-level coursework coded as ENG XXX may apply.* The remaining 9 hours must be from other disciplines.
* For students pursuing the ***Honors*** diploma (courses-only option) or ***Honors with Distinction*** diploma, the 21 Honors credits may include at most 9 hours with any specific academic prefix. The breadth requirement does not apply to the credit hours obtained as part of thesis research

**Admission**

A student may enter the Honors Program in one of three ways:

* An incoming first-year student is automatically designated an Honors student   
  if he or she meets certain criteria:
* 3.7 GPA or top 10% of high school class, and
* 29 ACT or 1300  SAT
* By earning a UD cumulative GPA of 3.5 or higher by the end of the first or second year as a full-time student, and having a sufficient number of Honors credits, the student is eligible to become a member. The Honors credits criteria are:
* 3 Honors credits by the completion of 60 credit hours.
* 6 Honors credits by the completion of 75 credit hours.
* 9 Honors credits by the completion of 90 credit hours.
* A transfer student, after the first or second year, with a minimum cumulative GPA of 3.5 or higher, mayapply directly to the University Honors Program, where the Honors credits are negotiated on a case-by-case basis.

**Special Benefits and Privileges for University Honors Students**

The Honors Program sponsors a variety of speakers, cultural activities and special events for students, including the Honors Symposium and the Honors Art Exhibition:

* Students completing the Honors Program diploma criteria will graduate with a specially notated Honors diploma and key.
* Incoming first-year Honors students are assured academic scholarships through the University's scholarship selection process, provided appropriate application materials are submitted on time.
* Honors students may apply for grants to assist with international study, research or service projects through the University's Cordell W. Hull International Fellows Fund.
* Honors students may apply for grants to assist with Honors Thesis projects and for travel funds to present their research at scholarly or professional conferences. Outstanding thesis projects may be eligible for additional funding through the Patrick F. Palermo Honors Program Founders Fund.
* Honors students receive special library benefits, including the use of the Honors Study Room 403 (visit the library circulation desk staff to check out the room key).
* The Associate Director for Fellowship Advising assists students considering graduate school and students applying for prestigious awards and national competitive fellowships.
* Honors students may participate in the annual [**Honors Art Competition and Exhibit**](http://honors.udayton.edu/UHP_General/ArtShow_index.htm).
* Honors students can enjoy the cultural arts on campus and in the Dayton area (within a 35-mile radius of campus) with help from the University Honors Program:  
    
  - We will subsidizes up to $10 towards a student ticket to the University Arts Series   
    each fall. Just bring us your ticket stub and the receipt in person within 30 days   
    of the performance.  
     
  - We will subsidize tickets (for you and a friend)―half the cost of the ticket   
    up to $10 each―for Dayton-area cultural events. Just bring us your ticket stub   
    and the receipt in person within 30 days of the performance.
* Honors students are guaranteed University housing for four years and are eligible   
  for special Honors housing and Honors residential programming.

**Earning Honors Credits**

Honors credits may be obtained in a variety of ways.

**Situations Where One Credit Hour of Coursework Equals One Honors Credit**

* **Honors courses** are identifies as honors with an “H” at the end of the number and in the section number (ENG 200H – H2)
* **Honors-approved LLCs** (may not be coded “H”).

Honors on Globalism:    
PHL 103 G sections  = 3 Honors credits  
HST 103 G sections = 3 Honors credits

School of Business  
ECO 203 H sections = 3 Honors credits

Sustainability, Energy and the Environment:  
PHL 103 S sections = 3 Honors credits  
HST 103 S sections = 3 Honors credits

* **Graduate-level courses** taken for undergraduate credit

The University of Dayton Graduate School will allow Honors students to register for all 500-level classes and above, which will count toward the required Honors credits. Students should work closely with their academic advisors as all such course access must be approved through each department's own standards and procedures

* **Contract Honors courses**, with prior approval of the Honors Program and the Department; limited to two contract courses per student. Note that Honors courses taken as part of a study abroad are counted as contract courses and contribute to the maximum contract course credit limit.

Since an Honors course is fundamentally different from a non-Honors course, the University Honors Program believes that the contract course option should be used as infrequently as possible. These courses are, however, possible options for students whose opportunities for obtaining the necessary credits to graduate with a University Honors Program diploma are seriously limited.

The UHP also acknowledges that each department or program makes the final decision whether or not to offer the ability to contract for Honors credits through a regular course offering. In all cases, the Department Chair or Program Director, the course instructor, the Honors student and the Honors Program Director must all agree to the proposal for Honors credits through a contract course. PLEASE NOTE that the Biology Department does not offer contract courses at this time.

**Restrictions**

* The contract course option may be used only after the completion of 75 credit hours of coursework.
* The contract course must be taken for a letter grade.
* The student must earn a grade of B or higher to earn Honors credits.
* A grade of B- or lower results in the course not counting for Honors credits.

* **Chaminade Scholars** earn 6 Honors credit hours.

Year 1: REL 356 = 3 Honors credits  
Year 3: ASI 358 = 3 Honors credits

**Situations Where One Credit Hour of Coursework   
Equals Less Than One Honors Credit**

**CORE** **completion** earns 15 Honors credits.

* Completing year 1, ASI 111-112 (12 credit hours) = 6 Honors credits
* Completing year 2, three courses (9 credit hours) = 6 Honors credits
* Completing year 3, “Professional Ethics in a Global Community” (3 credit hours) = 3 Honors credits

**Additional Ways to Earn Honors Credit Hours**

* **Study Abroad**:  Students participating in a summer or semester study abroad experience (with a minimum of 6 UD academic credit hours) earn 3 Honors credits per study abroad. A maximum of two such study abroad experiences can be used to earn a total of 6 Honors credits.  
    
  Honors credits for Honors courses successfully completed and taken as part of a study abroad are counted separately; however, they are considered contract courses and contribute to the maximum contract course limit of two.
* **Substantial scholarly activities in which no academic credit hours are earned**.  
  + The University Honors Program recognizes that many activities are fundamental to the development of the emerging scholar for which no academic credit is received. The Honors Program acknowledges these activities with Honors credits that apply toward the requirements for the ***Honors*** and ***Honors with Distinction*** diplomas.
  + Activities that may include a substantial scholarly component are (but not limited to), for example, Spring Breakouts, cultural immersions, ETHOS participation and research experiences for undergraduates. Likewise, participation in the above activities does not necessarily result in the awarding of Honors credits.
  + At the discretion of the Honors Program leadership, non-academic credit experiences may earn 1, 2 or 3 Honors credits. Approved activities will typically earn 1 Honors credit, with the exceptional activity earning 2. In rare circumstances, 3 Honors credits may be granted for an activity.
  + A maximum of 3 Honors credits may be applied to the requirements of the Honors Program diploma through non-academic credit work.
  + Honors students interested in obtaining Honors credits for non-academic credit work must request such consideration prior to the experience and must submit an [Honors Credits Application for Non-Academic Credit Work](http://honors.udayton.edu/UHP/Form_NonAcademicHonorsCredit.doc), including a letter of support from a faculty advisor.

**Minority Engineering Program**

The Minority Engineering Program (MEP) helps support minorities engineering students. It is open to African American, Hispanic American or Native American who want a career in engineering. The students in this program are clustered together in their first-year chemistry, physics and math classes. They also meet twice a week at enrichment workshops during the first year. The students are assigned a junior or senior engineering student as a mentor to help them adjust to campus life as well as a mentor from local industry. MEP students are required to attend Professional and Team Building Development seminars their first year. The first semester the seminar focuses on specific job functions of engineers. The second semester the focus is co-oping and internships. The goal of MEP is to help minority students develop a circle of support to help them succeed at their engineering studies.

**Enriched Engineering Program**

The Enriched Engineering Program (EEP) helps support students who are at the low end of our acceptance criteria. The students in this program are clustered together in their first-year chemistry, physics and math classes. See below for a listing of the potential clustered courses. They are also clustered in EGR100 sections together. They are required to attend enrichment workshops twice a week. Enrichment workshops give students an opportunity to study with their peers with upper-class engineering students as facilitators. The facilitators are available to assist the students with technical coursework. The goal is to help students develop both a solid foundation in their engineering skills as well as a support structure to help them succeed at their engineering studies.

Potential cluster courses for EEP

MTH137 CHM123 PHY206

MTH138 CHM124

MTH168

MTH169

## Get Involved

* American Institute of Chemical Engineers (AIChE) . . .

The student branch of the American Institute of Chemical Engineers actively participates in student activities such as Engineers' Week and social events. Industrial speakers and plant tours help familiarize the chemical engineering student with professional opportunities after graduation. Contact the departmental office at 229-2627 or in Kettering Lab Room 524 to get additional information.

* Society for the Advancement of Materials and Process Engineering (SAMPE) . . .

Contact the CME department office in Kettering Lab 524 or 229-2627 to get contact information.

* Society for Women Engineers (SWE) . . .

Holds regular meetings to develop the professional and social skills of the members though social activities, speakers and workshops. Contact Dr. Laura Bistrek, Kettering Lab Room 261 for further details. Their web address [www.udayton.edu/~swe/](http://www.udayton.edu/~swe/)

* Tau Nu Kappa . . .

Tau Nu Kappa is an honorary for students involved in different engineering organizations. To qualify, students must be involved in at least two engineering activities, some of which are listed above. Their web address www.udayton.engr.udayton.edu/stud for additional information.

* Tau Beta Pi . . .

Tau Beta Pi is the National Honor Society for engineers in all disciplines. Academic standing during the junior and senior years determines eligibility. Students are notified of their eligibility each semester. Activities include tutoring, socials, and service events. Their web address is [www.udayton.edu/~tbp/](http://www.udayton.edu/~tbp/) for additional details.

* Christmas on Campus - (COC) . . .

Each year UD students host approximately 1,300 City of Dayton Children for an evening of fun, food, and entertainment. On or about December 8, the event is put into action with the annual house-decorating contest in the Student Neighborhood. The COC committee is composed of student volunteers who work to plan and implement this event. Contact the Office of Student Development to get involved. Their web address is [www.udayton.edu/~coc/](http://www.udayton.edu/~coc/) for additional details. Check with the Office of Student Development and UD's web site to see what else is available. The University of Dayton web site is located at [www.udayton.edu](http://www.udayton.edu). The web page address for the Office of Student Activities is www.udayton.edu/~studact/.

## Information for the New Chemical Engineering Student

Information we know you will find useful . . .

→ Enrichment Workshops . . .

These workshops are conducted once each week for 2 hours and are staffed by highly motivated upper class engineering students (and monitored by a faculty member). They provide a means for engineering students to work in a collaborative learning environment with other first-year students and upper class engineering students. This is a good way to exchange information, ideas, and sort out problems with respect to courses - in particular calculus, physics, and chemistry.

→ If you fall behind in a course . . .

When you first become aware that you are falling behind in a course, you should ***immediately*** see your instructor to arrange for extra help. All faculty members maintain office hours so as to be available to students, but you must take the initiative in asking for help. You are now in a professional course of study and you have a responsibility to yourself to get the best education you possibly can. One can fall behind in a course by “cutting class” or sleeping in class. You (or your parents) are paying a lot of money for your education - get your money's worth by attending class and getting help if you are having difficulty understanding any of the material.

→ Office of Learning Resources …. Tutoring, etc.

We know a lot about learning these days. We know it happens both inside and outside the classroom, in formal and informal, individual and group settings, and in different ways for different people.  We know that learning is influenced by attitude and motivation, by pedagogy, by environment (space, time, lighting, sound), by learning habits and preferences.

The Ryan C. Harris Learning Teaching Center's Office of Learning Resources (formerly known as Student Learning Services) is a learning resource for students, parents, faculty,and staff at the University of Dayton.  OLR offers a wide variety of information and services to help everyone become a successful learner. Peruse the web site, attend one of our offerings, or contact our office and meet with a staff member -- however you look at it, OLR is **Your Partner in Learning**

http://www.udayton.edu/ltc/learningresources/index.php

→ Academic Regulations . . .

Become familiar with the academic regulations of the University of Dayton. Be sure that you know how to compute a GPA, and be sure that you know the prerequisites for the courses that you must take. Additional information can be found at www.bulletin.udayton.edu

## Faculty of the Department of Chemical Engineering

**Mr. Thane Brown,** Part-Time Instructor, B.S. Oregon State University (1961), retired Director of North American Engineering for Proctor & Gamble

**Dr. Charles E. Browning,** Department Chairman**,** Professor, Ph.D., University of Dayton (1976). Research interests composite materials

**Dr. Amy Ciric**, Senior Lecturer, Ph.D., Princeton University (1990). Research interests lie in the areas of process Synthesis and optimization and non ideal distillation.

**Dr. Kristen K. Comfort**, Assistant Professor, Ph.D., North Carolina State University (2008)

Research Interests: Nanomaterial-Cellular interactions and effects, Enhanced in vitro models, Dynamic Flow Cellular systems

**Dr. Donald A. Comfort**, Assistant Professor, Ph.D., North Carolina State University (2006).

Research interests – biocatalysts, bioremediation.

**Dr. Matthew J. Dewitt**, Assistant Professor and UDRI Joint Appointee, Ph.D., Northwestern University (1999). Oxidative and pyrolytic reaction chemistry; quantitation and mitigation of emissions from combustion sources; hydrocarbon fuel chemistry and engineering

**Dr. Michael J. Elsass**, Director – Chemical Engineering, Lecturer, Ph.D., The Ohio State University (2001). Research interests are in the areas of data analysis, decision support, diagnostics and modeling knowledge in chemical engineering operations

**Dr. Donald A. Klosterman**, Associate Professor and UDRI Joint Appointee, Ph.D., The University of Dayton (1994). Research interests are composite and polymer engineering.

**Dr. Khalid Lafdi**, Professor, Ph.D., (1989). Research interests include carbon foams, carbon nanoconstituents, composite materials, and design fabrication of thermal property devices for micro- and nanometric measurements.

**Dr. C. William Lee,** Professor;Ph.D., The Ohio State University (1982). Research has been in the area of modeling, control and automation of polymer processing.

**Dr. Kevin Myers,** Professor, D.Sc., Washington University (1986).

Research interests include mixing, chemical reaction engineering, and process modeling.

**Dr. Tony Saliba,** Professor, Ph.D., The University of Dayton (1986). Research involves the development and use of process models, expert systems and expert models for the intelligent processing of advanced composite materials

**Dr. Sarwan Sandhu**, Professor, Ph.D., The Imperial College, London (1973).

Research activities involves the application of thermodynamics, kinetics and reaction engineering in addition to fluidization, electrochemistry and electrochemical engineering, batteries/fuel cells, optics, and material science engineering.

**Dr. Erick Vasquez**, Asst. Professor, Ph.D., Mississippi State University (2013), Research interest areas: Synthesis, characterization, and applications of surface-functionalized nanoparticles, polymer brushes, biomaterials interactions with nanoparticles, transport modeling

**Dr. Robert Wilkens**, Professor, Ph.D., Ohio University, (1997). Research interests are in the area of multiphase flow, thermal management, and fluid mechanics.