Welcome to the College of Engineering!
Degree Offerings

- Aerospace
- Agricultural
- Biological Systems
- Chemical
- Civil & Environmental
- Computer
- Construction
- Electrical
- Industrial
- Materials
- Mechanical
- Software

Minors
- Bioengineering
- Energy Systems
- Nondestructive Evaluation
- Nuclear Engineering
- Sales Engineering

Undecided? Choose Undeclared Engineering
- Evaluate engineering majors during Basic Program
- Declare a major after selecting one matching your interests
Engineering Basic Program Classes (BP)

- Classes required by all engineering majors
- Typically takes 2-3 semesters to complete
- Need a 2.0 grade point average in BP before moving to upper level engineering courses
- Enables students to easily change engineering majors early in their program
## Basic Program – 27 credits

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>4.0</td>
<td>Math 165</td>
<td>Calculus I</td>
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<tr>
<td>4.0</td>
<td>Math 166</td>
<td>Calculus II</td>
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<td>3.0</td>
<td>Engl 150</td>
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<td>3.0</td>
<td>Engl 250</td>
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<tr>
<td>4.0</td>
<td>Chem 167 or Chem 177</td>
<td>Chemistry</td>
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<tr>
<td>3.0</td>
<td>Engr 160</td>
<td>Engr. Problems</td>
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<tr>
<td>5.0</td>
<td>Phys 221</td>
<td>Physics I</td>
</tr>
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<td>R</td>
<td>Engr 101</td>
<td>Orientation</td>
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<tr>
<td>1.0</td>
<td>Lib 160</td>
<td>Library</td>
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English Placement

- Engl 150: Critical Thinking and Communication
  - ACT-E $\geq$ 24 or SAT-V $\geq$ 550 = credit for Engl 150*
  - ACT-E = 23 or SAT-V = 540 and HSR of $\geq$ 75% = credit 150*

*Must pass Engl 250 with “C” or better at ISU to get credit for Engl 150 from the ACT/SAT scores above...

- English AP exam $\geq$ 3 Language or $\geq$ 4 Literature = credit 150
- Pass English Placement Assessment taken during orientation = credit 150
  - Adviser will have results at advising meeting
English Placement and Library 160

• Engl 250: Written, Oral, Visual, Electronic Communication
  • Take after Engl 150 unless meet criteria for 150 credit
  • Students typically take Sophomore year

• Engl 250 Test out:
  • Offered 1st Sat. after classes start
  • $100 fee and must register with Testing Services prior to taking
  • A 3-hour, 2 essay exam covering written, oral, visual, and electronic communication (recommend ACT-English ≥ 29 & top 5% HS Rank)

• Lib 160: Information Literacy: some will take it in fall, some in spring
  • Must take with first English class at ISU
  • May take it 2nd half of the semester
  • Test out available during the semester (must register with Lib office)
English for Non Native Speakers

Students Whose Native Language is not English:

• Must take English Placement Test for Non-native Speakers of English before taking an English class
  • Offered at beginning of each semester
  • Exemption for students graduating from U.S. high school with ACT-E 16+ or SAT-V 410+

• If placed in Engl 101B or 101C, must complete before taking Engl 150 or Engl 250

• If placed in Engl 99L or 99R, can take with Engl 150/250
Mathematics Placement

**Placement based on online placement assessment and college transfer courses**

Trig and Algebra courses are required prerequisites to Engr

- Do not need to take these courses if passed Trig/Algebra in placement assessment or have college transfer credit

Options for starting schedules in math:

- Math 10 (Algebra—Fee of $530)
- Math 140 (College Algebra)
- Math 142 (Trigonometry)
- Math 165 (Calculus I - Algebra is prerequisite)
- Math 166 (Calculus II - Trigonometry is prerequisite)
- Higher: Math 265 (Calc III), Math 266/267 (Differential Equations)
Chemistry Placement Options

• **Chem 177: General Chemistry** *(must be in Math 140 or higher)*
  • Lab must be taken with the class
  • Required for ChE, CE, MatE majors

• **Chem 167: Chemistry for Engineers** *(must be in Math 140 or higher)*
  • Required for non-chemistry based engineering majors
  • Lab required for AE, BSE, and ME majors
  • Chemistry transfer credits for engineering will come in as Chem 177
  • Chem 177 credits can be used for all engineering majors (additional chemistry may be needed)

• **Chem 50: College Chemistry Preparation** ($350 Fee)
  • For students who do not have the equivalent of 1 year of high school chemistry
Engineering and Physics Classes

**Engr 160**: Engineering problem solving and computer programming

- 2 part class: must pass both parts to pass class
- Some majors prefer departmental version: AerE 160; CE 160; ChE 160; CprE/EE 185; IE 148; ME 160
- Any version of Engr 160 taken meets requirements for any majors
- Must be finished with Math 142 and enrolled in Math 165 (only enrolled in Math 142 for CprE/EE185, IE 148)

**Phys 221**: Calculus-based physics

- Must take Math 166 before or with Phys 221
- Time consuming course with 10-15 hours of homework per week
- Avoid Phys 221 first semester if possible to allow for adjustment
Orientation to Engineering

**Engr 101 Objectives:**
- Weekly adviser contact
- Meet engineering students & connect for study groups
- Learn about policies, procedures & campus resources
- Acquire study skills
- Choose or confirm an engineering major
  - What are the disciplines & specialties within the major?
Examples of Other Required Engineering Courses

Engineering Graphics and Design
• Credit or enrollment in Math 142 (CE 170 requires Math 165)
• AE 170 for AE; BSE 170 for BSE; CE 170 for CE and ConE; ME 170 for ME

Com S 227—Intro to Object Oriented Programming
• Required for CprE and SE

Chem 178 and lab—General Chemistry
• Required for CE (environmental), ChE, MatE
• Continuation of Chem 177

EM 274—Engineering Statics
• Required of all majors except ChE, CprE/EE/SE
• Credit or enrollment in Math 166 and Phys 221

Phys 222—Introduction to Classical Physics II
• Required for all majors except software engineering and environmental
• Must have had Phys 221 and Math 166

Mat E 273—Principles of Materials Science and Engineering
• Required for AE, AerE, IE, ME
• Sophomore classification and Chem 167 or 177 and Math 165
Social Science/Humanities Gen. Ed. Courses

• 12-15 credits over academic career depending on major
• Examples – Psych 101, Soc 134, History, Econ 101, World Languages, Anthr 201, Pol Sci 215
• 3 credits must be from U.S. Diversity list and 3 credits from International Perspective
• Some departments require specific courses and/or have sequence requirements
• Typically take at least one Gen Ed elective 1st year
Engineering World Language Requirement

• All engineering students must have the equivalent of 2 years of high school world language

• Students must show they meet this requirement by sending ISU:
  • High school transcript showing 2 years of a single world language
  • College transcript showing 2 semesters of a single world language

• Students not meeting the above requirement must take 2 semesters of a single world language in college for their engineering degree
Minors/Double Majors

• Languages and Cultures for Professionals (LCP)
  • World language minor/major for engineering students
  • Take online placement assessment to determine first course if have had 3-4 years of world language in high school and want to start at 300 level

• 5 Engineering Minors
• Engineering Leadership Certificate
• Other common minors: Business, Economics, Math, Music Technology, Physics, Sustainability Studies, Entrepreneurial Studies, Wind Energy

• Must declare major before adding minor/second major
  • Recommend waiting one year before deciding to add to allow for exploration
AP/IB Credits (Advanced Placement/International Baccalaureate)

- It is student’s responsibility to tell adviser of AP/IB courses
- Chemistry dept. must review AP lab notebook and syllabus before chemistry lab credits applied
- All other AP/IB credits applied automatically
- You may repeat these courses at ISU
  - Need 4 in AP Chem or 5 in IB HL Chem for Chem 177/178
  - Need 5 in AP Com S A for Com S 227
  - Need 4 in AP Math AB or 3 in Math BC for Math 165
  - Need 4 in AP Math BC for Math 165 and Math166
  - Need 6 in IB HL Math for Math 142, 165
  - Need 5 in AP Phys C-Mech or 4 on Mech & 3 Elec/Mag for Phys 221
Transfer Credits

- The Transfer Credit Evaluation from the Office of Admissions shows how a class transfers into ISU

- If a transfer class shows up as a 1T, 2T, 3T, 4T it will not count towards an engineering degree unless it is reviewed by a faculty member from the course content area and approved
  ➢ Students must initiate this review with their academic adviser during the school year

- TRANSIT website allows you to enter courses and see how they transfer to your engineering major [www.transit.iastate.edu/](http://www.transit.iastate.edu/)

- Engineering accepts credits for transfer courses with a grade of “C” or better only

- Up to 65 transfer credits from a 2-year school may apply to degree (no credit limit for 4-year) - Last 32 credits must be taken at ISU
Plan Your Schedule for Success

• Schedule no more than three problem solving courses per semester and less if lots of outside commitments
  • Examples of problem solving classes: Math, Chem, Com S, Engr 160, Phys

• Problem solving courses take more time than other classes to complete homework so need to allow for this time in your schedule

• Important to not get behind in problem solving courses because VERY hard to catch up
## Example 1st Semester Schedules

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<thead>
<tr>
<th>Example A</th>
<th>Example B</th>
<th>Example C</th>
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<tbody>
<tr>
<td>Engl 150 (3)</td>
<td>Math 166 (4)</td>
<td>Math 267 (4)</td>
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<tr>
<td>Math 142 (3)</td>
<td>Engr 160 (3)</td>
<td>Phys 222 (5)</td>
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<tr>
<td>SSH (3)</td>
<td>Chem 167 (4)</td>
<td>EM 274 (3)</td>
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<td>Lib 160 (1)</td>
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<td>14 Credits</td>
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Typically take between 13-16 credits (problem-solving courses shown in bold above)
Use Support Resources

- Advisers
- Academic Success Center
- Instructors
Advisers – Facilitators of Information

3 Types: Financial Aid, Residential, Academic

Academic advisers provide:
• Course guidance & selection
• Referrals to resources
• Assistance with making informed career-related decisions
• Student advocacy and support

Advising in the College of Engineering
• Faculty adviser, professional adviser, or both, depending on the department
Student Support Resources

- **Academic Success Center**
  - Supplemental Instruction – Tutoring Services
  - Study Skills Class (Psych 131) – Academic Coaching

- **Help Rooms/Sessions**
  - Chemistry – English – Math – Physics

- **Other Resources**
  - Student Counseling – Multicultural Liaison Officer
  - Disability Resources – Clubs & Organizations

*Remember, your assigned academic adviser is a source of help too…*
Ask for Help *EARLY*

- First 2-4 weeks are critical
- Problems build on the knowledge learned from the prior assigned problems
- Research shows that students who are not afraid to ask for help are more successful

- Read the Syllabus – and *Follow it!*
- **YOU MUST ATTEND CLASS!**
- Please visit with your [instructor](mailto:instructor@eng.iastate.edu) as often as possible as well!
Study Abroad Opportunities

The College maintains partnerships with universities worldwide

• Examples: Australia Germany Ireland Singapore France Mexico

• Summer, semester, full-year options
• Credits may be transferred to Engr degree
• English and non-English speaking programs

For more information, contact:

Engineering International Programs
112 Marston Hall
www.engineering.iastate.edu/studyabroad/
Engineering Work Experience

• Internship work experiences
  • Summer, Semester, Full-year options

• Benefits
  • Earn on average $2900/month salary
  • Higher placement rate at graduation

For more information, contact:

Engineering Career Services
308 Marston Hall
www.engineering.iastate.edu/ecs
Policies and Procedures

• Schedule changes during first week of each semester:
  • Student does online through AccessPlus

• Schedule changes after first week of classes:
  • Adviser and Instructor signatures required
  • $12 fee

• Last day to drop a full-semester course
  • Typically one week after mid-term grade reports
Policies and Procedures

- Maximum course drops for ISU degree:
  - Direct from High School students – MAY DROP UP TO (5) CLASSES
  - Transfer students - MAY DROP UP TO (4) CLASSES
  - Dropped courses during the first semester at ISU and the first week of class each semester do not count towards this limit

- Maximum “Designated Repeats” for retaking courses:
  - 15 Credits (new class grade replaces old grade for cumulative GPA)
  - Repeats above 15 credit limit will have both new class grade and old grade averaged for cum GPA
Final Notes

Please remember to:

1. Get your ISU student ID card at 0530 Beardshear Hall; bring photo ID.
2. Register for ISU email at Student Answer Center, Ground floor Beardshear Hall.
3. **Arrive on time to your advising appointment!**
4. After visiting with your academic adviser, you will be registered for your first semester of classes.
Questions? We are here to help!

Engineering Student Services

http://www.engineering.iastate.edu/student-services/advising/