IOWA STATE UNIVERSITY
College of Engineering

YOUR ENGINEERING CAREER STARTS TODAY

Iowa State University

Discovery with Purpose  www.engineering.iastate.edu
Importance of Meeting Others/Study Groups

• People Bingo
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

Certificate
- Leadership in Engineering

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

Discovery with Purpose

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Circle engineering majors interested in

Question #1 - Orientation Worksheet
Engineering Basic Program Classes (BP)

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

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Math 165</td>
<td>Calculus I</td>
</tr>
<tr>
<td>4</td>
<td>Math 166</td>
<td>Calculus II</td>
</tr>
<tr>
<td>3</td>
<td>Engl 150</td>
<td>Critic Think/Comm</td>
</tr>
<tr>
<td>3</td>
<td>Engl 250</td>
<td>WOVE Composition</td>
</tr>
<tr>
<td>4</td>
<td>Chem 167 or 177</td>
<td>Chemistry</td>
</tr>
<tr>
<td>3</td>
<td>Engr 160</td>
<td>Engr. Problems</td>
</tr>
<tr>
<td>5</td>
<td>Phys 221</td>
<td>Physics I</td>
</tr>
<tr>
<td>R</td>
<td>Engr 101</td>
<td>Orientation</td>
</tr>
<tr>
<td>1</td>
<td>Lib 160</td>
<td>Library</td>
</tr>
</tbody>
</table>
English Placement

• Engl 150: Critical Thinking and Communication
  • ACT-E ≥ 24 or SAT-V ≥ 550 = credit for Engl 150*
  • ACT-E = 23 or SAT-V = 540 and HSR of ≥ 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 ≥ 3 Language or ≥ 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 Class

• Engl 250: Written, Oral, Visual, Electronic Communication
  • Take after Engl 150 unless meet criteria for 150 credit
  • Honors students take Engl 250H in Fall; other students by end of 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)
  • Not available to students required to take Engl 250H Fall semester

• 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
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
List English and Library classes you plan to take – *Question #2 – Orientation Worksheet*
Mathematics Placement
Placement based on online placement assessment:

• Trig and Algebra are required prerequisites to Engr
  • Must take Trig/Algebra if did not test out through placement assessment

• Other math test out options:
  • Need 4 in AP Math AB or 3 in Math BC for Math 165
  • Need 4 in AP Math BC for Math 165 and 166
  • Need 6 in IB HL Math for Math 142, 165

• Engineering students can start at any math level
  • Need a good math foundation to build upon
# Mathematics Placement

<table>
<thead>
<tr>
<th>ALEKS % (S)</th>
<th>Class Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&lt;45</td>
<td>Math 10 ($530)</td>
</tr>
<tr>
<td>45-59</td>
<td>Math 140 (Alg)</td>
</tr>
<tr>
<td>60-74</td>
<td>Math 142/143x (Trig)</td>
</tr>
<tr>
<td>75-100</td>
<td>Math165 (Calc I)</td>
</tr>
<tr>
<td>80+ 14/20 on Blackboard Calc II assessment</td>
<td>Math 166 (Calc II)</td>
</tr>
<tr>
<td>85+ transfer/AP credit for Math 166</td>
<td>Math 265/266/267 (Calc III/Differential Equations)</td>
</tr>
</tbody>
</table>
Calculus I (Math 165) Credit

• Considerations for students with HS Math 165 credit from AP or transfer class
  • If your Math 165 material in HS was covered over 2 semesters instead of one, think about whether you want to re-take Math 165 your first semester at ISU
    • Math 166 (Calculus II) is considered the hardest of the calculus series
    • Math 166 is a one semester course so the material will be covered twice as fast as your Math 165 material
  • You need good time management and study skills to make sure you can keep up with new material presented in Calc II
List Math class you plan to take

*Question #2 – Orientation Worksheet*
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
- Need 4 in AP Chem or 5 in IB HL Chem for Chem 177/178
- Chemistry dept. must review AP class and lab notebook first week of Fall semester before chemistry credits will be applied

**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)*
- Students without the equivalent of 1 year of high school chemistry
List Chemistry class you plan to take

**Question #2 – Orientation Worksheet**
Engineering Classes

Engr 160: Engineering problem solving and computer programming

• 2 part class: must pass both programming and problem solving to pass class
• Engr 160 meets requirements for all majors
• Some majors prefer departmental version: AerE 160; CE 160; ChE 160; CprE/EE 185; IE 148; ME 160
• If in Math 142 (Trig), most likely will wait to take Engr 160

Spring
Engineering Classes

**Engr 101: Orientation to Engineering**
- 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?
Physics Class

**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

**Physics test out options:**
- For AP Phys C exam need 5 on Mech for Phys 221
  - or 4 on Mech & 3 Elec/Mag
- AP Phys B exam will only provide credit for Phys 101 or Phys 111/112
  - Does not count for engineering major
- No IB credit available
List the Engineering/Physics classes you plan to take

Question #2 – Orientation Worksheet
Examples of Other Required Engineering Courses

Engineering Graphics and Design
- Introduce engineering graphics and design
- Credit or enrollment in Math 142 required
  - ME 170
    - Required for ME majors
  - AE 170
    - Required for AE majors
  - BSE 170
    - Required for BSE majors
  - CE 170
    - Required for CE and Con E majors
      - CE 170 requires Math 165
    - Undeclared engineers may take AE/BSE 170 or ME 170

Project Lead the Way Introduction to Design class = 170
- Must have taken end of year exam and requested college transfer credit
Examples of Other Required Engineering Courses

Com S 227: Intro to Object Oriented Programming
- Required for Cpr E and SE
- 5 on AP Computer Science A exam = Com S 227
- 4 on AP Computer Science A exam, or 4 on IB HL Com S exam = Com S 107 which does not count for engineering majors
- 6 on IB HL Com S exam = Com S 207 (counts for EE tech elective)

Chem 178 and lab: General Chemistry
- Required for CE (environmental), ChE, Mat E
- Continuation of Chem 177
- Need 4 in AP Chem or 5 in IB HL Chem for Chem 177/178
- Chemistry dept. must review AP class and lab notebook first week of Fall semester before chemistry credits will be applied
List other required Engineering classes you plan to take

*Question #2* – Orientation Worksheet
Examples of Other Courses

Required Seminar Courses
- Engr 104—LEAD students
- Hon 121—Honors students
- U ST 101A—Hixson Award students
- Psych 131—MVP Award students (section AP, AQ, AR, AT)
- U ST 101C—Science Bound students
- U ST 105—GWC students

Other Potential Courses
- Music courses
- ROTC student courses
List any of these “other” classes you plan to take - Question #2 – Orientation Worksheet
Social Science/Humanities Gen. Ed. Courses (SSH)

- 12-15 credits over academic career depending on major
- Some departments require specific courses
- Typically take at least one Gen Ed elective 1st year
Circle 4 SSH/General Education Courses

Back of Orientation Worksheet

10-15 Minute Break

See 202 Marston to declare engineering major
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
    • Placement assessment taken online (20 minutes) from World Languages and Cultures ISU website for Chinese, French, German, Russian, and Spanish
    • Opportunity to take placement assessments at 3:45 today
    • Take score to World Languages and Cultures Department, 3102 Pearson Hall prior to academic advising appt.

• All minors/double majors
  • Recommend waiting one year before declaring to allow time to explore
  • Must declare major before adding minor/second major
  • Minor: Typically 5 classes
Credit by Examination

• Students not wishing to study a world language in college can earn college credit by exam for Spanish, French, German, Latin, Russian, or Chinese
  • Latin departmental exams are available on Day 2 of orientation from 9am-3pm in 3102 Pearson Hall ($100 payment)
  • Chinese departmental exams are available by appointment only (contact WLC dept., 3102 Pearson Hall, 515-294-4046)
  • German, Spanish and French CLEP (College-level Examination Program) exams are given by appointment in the Testing Office throughout the school year ($100 payment)
  • Russian test out exams are given by appointment in the Testing Office throughout the school year ($100 payment).
  • All CLEP and dept. exams are available during the academic school year
• Students may also receive college credit for other subjects through Departmental and CLEP exams given throughout the school year
AP/IB Credits (Advanced Placement/International Baccalaureate)

- It is student’s responsibility to tell adviser of AP/IB courses
  - Results are not received until August
- Before chemistry credits applied, Chemistry dept. must review AP class and lab notebook Fall semester
- 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 6 in IB HL Com S for Com S 207
  - 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
List all AP/IB/CLEP tests you will have (and scores if known)

*Question #3 – Orientation Worksheet*
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

- Engineering accepts only credits for transfer courses with a grade of “C” or better and only 65 credits from a 2-year school
List all transfer courses you received college credit for (and grades if known)

Question #4 – Orientation Worksheet
Plan Your Schedule for Success

- Schedule no more than 3 problem solving courses per semester and less if you have lots of outside commitments.
- Problem solving classes 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

<table>
<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 165 (4)</td>
<td>Math 166 (4)</td>
</tr>
<tr>
<td>SSH (3)</td>
<td>Engr 160 (3)</td>
<td>Chem 167 (4)</td>
</tr>
<tr>
<td>Math 142 (3)</td>
<td>Chem 177 (4)</td>
<td>Engr 160 (3)</td>
</tr>
<tr>
<td>Chem 167 (4)</td>
<td>Chem 177L (1)</td>
<td>Engr 101 (R)</td>
</tr>
<tr>
<td>Engr 101 (R)</td>
<td>Engr 101 (R)</td>
<td>SSH (3)</td>
</tr>
<tr>
<td>Lib 160 (1)</td>
<td>SSH (3)</td>
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</table>

<table>
<thead>
<tr>
<th>Credits</th>
<th>Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Credits</td>
<td>15 Credits</td>
<td>14 Credits</td>
</tr>
</tbody>
</table>

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
## Learning Communities (LC)

- Required
- Residential
- Common courses
- Social activities

- Optional
- Non-Residential
- LC course
- Service projects

- All engineering majors offer a LC
  - LC have trained peer mentors (upper level engineering students)
  - Many residential LC are already filled

- Other Learning Community Option examples
  - Honors
  - LEAD (multicultural)
  - LGBTQA (Lesbian, Gay, Bisexual, Transgender, Queer and Ally)
  - WiSE (Women in Science/Engineering)
  - Veterans

- Inform your adviser at your appointment if you plan to be in a LC
  - Joining is free

**Discovery with Purpose**  
www.engineering.iastate.edu
Student Disability Resources (SDR) Office

- SDR office coordinates reasonable accommodations for students with qualifying documented disabilities while they are enrolled at the university

- Eligibility and accommodations in college are very different than in high school
  - College students must ‘self identify’ and request assistance
  - College students must provide valid documentation to establish eligibility (see http://new.dso.iastate.edu/dr/doc)

- Arrange for accommodations early in semester—transition from high school to college can be quite challenging
  - Meet with SDR staff during orientation
  - Meet with SDR staff during first week of semester

- Eligible students work with SDR staff to communicate with their professors/instructors regarding reasonable accommodations needed

Location: 1076 Student Services Building
Phone: (515) 294-7220
Email: disabilityresources@iastate.edu
Website: http://new.dso.iastate.edu/dr/
Student Support Resources

• Academic Success Center
  • Supplemental Instruction
  • Study Skills Class (Psych 131)
  • Tutoring Services
  • Academic Consulting

• Help Rooms/Sessions
  • Chemistry
  • English
  • Math
  • Physics

• Other Resources
  • Student Counseling
  • Academic Adviser
  • Multicultural Liaison Officer
  • Clubs & Organizations
  • Studying Engineering: A Road Map to a Rewarding Career, 4th Edition, by Raymond B. Landis

Remember, your instructor is a source of help too…

Discovery with Purpose  www.engineering.iastate.edu
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

• Benefits
  • Average $2900/month salary
  • Higher placement rate at graduation

For more information, contact:

Engineering Career Services
308 Marston Hall
www.engineering.iastate.edu/ecs/
Future Dates and Deadlines

• Residence halls open:
  • Tuesday and Wednesday 8/20 and 8/21
    • You will be assigned one of these move-in dates
    • Classes start on Monday 8/26

• Register for & attend Destination Iowa State (registration card in orientation binder):
  • Destination Iowa State begins: Thursday 8/22
  • Cost included in Orientation Fees
  • Complete card in pocket of binder or register online by August 1

• Complete Orientation Evaluations - Turn in at drop box locations tomorrow

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Next

- Cyclone Aide will take you to downstairs hallway to get advising appointment card
  - Cards listed in alphabetical order by your last name
  - Card has name of adviser, time and location of appointment

- To change your major, see 202 Marston office staff (you will need a new card with new adviser name and appointment)

- *Come back to this room* for Web Registration presentation
We want you to be successful!

So, please ask for help early and often!

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