Your engineering career begins today
Afternoon Agenda

• The Engineering Curriculum 1:45 - 2:35pm
• Break 2:35 - 2:45pm
• Academic Opportunities & Resources 2:45 - 3:10pm
• Advising Appointment Cards 3:10 - 3:15pm
• Web Registration Presentation 3:15 - 3:45pm

The purpose of this session is to get you ready for your advising appointment!
Student Video
Degree Offerings

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

Minors
- Biomedical Engineering
- 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
Orientation Worksheet – Question #1

Circle all engineering majors you are currently considering
Engineering Basic Program (BP) Classes

- Classes required by all 12 engineering majors
- Typically takes 2-3 semesters to complete
- Need 2.0 grade point average in BP and 2.0 cumulative grade point average (GPA) 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 Title</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>
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<tr>
<td>3</td>
<td>ENGL 150</td>
<td>Critic Think/Comm</td>
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<td>3</td>
<td>ENGL 250</td>
<td>WOVE Composition</td>
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<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>
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</table>
English Placement

- ENGL 150: Critical Thinking and Communication
  - ACT-E 24+ or ACT-E 23 and HSR in top 25% = credit for ENGL 150**
  - SAT-CR (Prior to March 2016)
    - SAT-CR 550+ or SAT-CR 540 and HSR in top 25% = credit ENGL 150**
  - SAT-EWR (After March 2016)
    - SAT-EWR 600+ or SAT-EWR 590 and HSR in top 25% = credit ENGL 150**
  - English AP exam: 3 Language or 4 Literature = credit ENGL 150

**Must pass ENGL 250 with “C” or better at ISU to get credit for ENGL 150 from the ACT/SAT scores above...
English Placement and Library 160 Class

ENGL 250: Written, Oral, Visual, Electronic (WOVE) Communication
- Taken after ENGL 150, unless you meet the criteria for ENGL 150 credit
- Honors students take ENGL 250H in fall; Others will take in spring or 2nd year

ENGL 250 Test Out:
- $100 fee - Must register prior to exam
- Held 1st week of class (3-hr, 2-part exam)
  - Recommend ACT-E 29 & Top 5% HS rank
  - Not available to Honors students

Lib 160: Information Literacy
- Taken 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: Ask Adviser for info
  • Exemption for students graduating from U.S. High School with ACT-E 16+, SAT-CR of 410+, or SAT-EWR of 450+

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

• If placed in ENGL 99S ($480 fee) or 99R ($160 fee), can take with ENGL 150/250
Orientation Worksheet – Question #2

List English and Library classes you need to take
Mathematics Placement

Placement based on online ALEKS Math placement assessment:

• Engineering students can start at any math level
  • Need a strong foundation in math for problem solving classes
• Trig/Algebra are required prerequisites to Engineering
  • Must take Trig/Algebra if not placed into Calculus I
  • ALEKS Math placement determines math course and Academic Adviser for 1st semester as well as any required academic programming

• Other math test out options:
  • Need 4-5 in AP Calculus AB or 3 in AP Calculus BC for MATH 165 credit
  • Need 4-5 in AP Calculus BC for MATH 165 and 166 credit
  • Need 6 in IB HL MATH for MATH 100 level and 165 credit
# Mathematics Placement

<table>
<thead>
<tr>
<th>ALEKS % (S)</th>
<th>Class Placement</th>
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<tr>
<td>S&lt;38</td>
<td>MATH 10 ($530 Fee)</td>
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<tr>
<td>38-49</td>
<td>MATH 140 (Algebra)</td>
</tr>
<tr>
<td>50-69</td>
<td>MATH 143 (Pre-Calc)</td>
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<tr>
<td>70-100</td>
<td>MATH 165 (Calc I)</td>
</tr>
<tr>
<td>75+ and 14/20 on Blackboard Calc II assessment</td>
<td>MATH 166 (Calc II)</td>
</tr>
<tr>
<td>80+ and 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 High School MATH 165 credit from AP or transfer class
  - If your MATH 165 material in HS was covered over two semesters instead of one, think about if you want to re-take MATH 165 your 1st semester at ISU
    - MATH 166 (Calculus II) is considered the most difficult 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
Orientation Worksheet – Question #2

List the math class you plan to take
Chemistry Placement Options

CHEM 177: General Chemistry *(must be in MATH 143 or higher)*
- Lab must be taken with the lecture
- Required for Ch E, C E, Mat E majors
- Need 4-5 in AP CHEM or 5 in IB HL Chemistry for CHEM 177/178
- Chemistry Dept. must review lab notebook first week of fall semester before chemistry lab credits will be applied

CHEM 167: Chemistry for Engineers *(must be in MATH 143 or higher)*
- Required for non-chemistry based Engineering majors
- Lab required for A E and BSE majors
- Chemistry transfer credits for engineering will come in as 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
Orientation Worksheet – Question #2

*List the chemistry class you plan to take*
Importance of Meeting Others/ Finding Study Groups

Let’s play People Bingo!

Please find the yellow sheet in your packets and then listen for instructions.
Engineering Classes

ENGR 101: Orientation to Engineering

• Weekly adviser contact
• Meet engineering students and connect for study groups
• Learn about policies, procedures and campus resources
• Acquire study skills
• Choose or confirm an engineering major
  • What are the disciplines and specialties within the major?
Engineering Classes

ENGR 160: Engineering Problem Solving & Computer Programming

- 2-part class: Must pass both problem solving & programming to pass course
- ENGR 160 meets requirements for all majors
- Some majors prefer departmental version: ABE 160; Aer E 160; C E 160; Ch E 160; Cpr E/E E/S E 185; I E 148; M E 160
- If in MATH 143 (Prep for Calculus), will need to wait until 2nd semester to take ENGR 160
  - Some Departmental versions can be taken while enrolled in MATH 143
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:
• AP Physics C exam – need 4-5 on Mechanics for PHYS 221
• AP Physics C exam – need 4-5 on Elec/Mag for PHYS 222
• AP Physics 1 or 2 exam will only provide credit for PHYS 111/112
  • Does not count for Engineering majors
• No IB credit available

PHYS 50X: Introduction to Physics Preparation
• Optional class to prepare students for PHYS 221
Orientation Worksheet – Question #2

List the Engineering/Physics classes you plan to take
Other Potential Engineering Courses

Engineering Graphics and Design
- Introduction to engineering graphics and design
- Credit or enrollment in MATH 143 required
  - M E 170 - Required for M E majors
  - ABE 170 - Required for A E and BSE majors
  - C E 170 - Required for C E and Con E majors

Project Lead the Way (PLTW): *Introduction to Engineering Design* may = 170
Other Potential Engineering Courses

**COM S 227: Intro to Object Oriented Programming**
- Required for Cpr E and S E
- **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 E E tech elective)

**CHEM 178 and Lab: General Chemistry II**
- Required for C E (Environmental), Ch E, Mat E
- Need **4-5** in AP Chemistry or **5** in IB HL Chemistry for CHEM 177/178
- Chemistry Dept. must review lab notebook first week of fall semester before chemistry lab credits will be applied
Orientation Worksheet – Question #2

List other required engineering classes you plan to take
Examples of Other Courses

Required Seminar Courses

• ENGR 104 - Leadership Engineering Academic Diversity (LEAD) Students
• HON 121 - Honors Students
• U ST 101A - Hixson Award Students
• U ST 101B - Multicultural Vision Program (MVP) Award Students
• U ST 101C - Science Bound Students
• U ST 105 - George Washington Carver (GWC) Students
• U ST 101D - Student Athletes

Additional Seminar Courses

• PSYCH 131 - Academic Learning Skills
Examples of Other Courses

Please list if you plan to participate in any Music or ROTC courses

**Music Courses**
- Marching Band
- Concert Band
- Ensembles (Jazz or Wind)
- Symphonic Band
- Choir
- Symphony Orchestra

**ROTC Courses**
- Military Science
- Naval Science
- Air Force Aerospace Studies
Orientation Worksheet – Question #2

List any of these “other” classes you plan to take
Social Science/Humanities Courses (SSH)

- 12-15 credits over academic career (depending on major)
- Examples – PSYCH 101, SOC 134, History, ECON 101, World Languages, ANTHR 201, POL S 215
- Some departments require specific courses
- Typically take at least one Gen Ed elective first year
- May have AP/Transfer credit for some SSH courses. For fall semester, please select SSH courses for which you do not have pending credit.
Orientation Worksheet – back page

**CIRCLE FOUR**

**SSH/General Education classes**
10 minute break

If you want to change your major, talk to me during break
Minors/Double Majors

- All minors/double majors
  - Recommend waiting one year before declaring to allow time to explore
  - Must declare major before adding a minor or second major
  - Minor: Typically 5 classes

- Languages & 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 above the 100-level
    - Placement assessment taken online (20 minutes) from World Languages & Cultures ISU website for Chinese, French, German, Russian, and Spanish
    - Opportunity to take placement assessments at 3:45pm today
    - Take your score sheet with you to your academic advising meeting tomorrow

**If you took two years of the same world language in high school, you are not required to complete any further language for the College of Engineering at Iowa State University**
AP/IB Credits
(Advanced Placement/Int’l Baccalaureate)

• Students are responsible for telling Adviser of AP/IB courses
  • Results are not received until after orientation

• CHEM Dept. must review lab notebook before CHEM Lab credits applied
  • All other AP/IB credits applied automatically

• You may repeat these courses at ISU
  • Need 4-5 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 4-5 in AP MATH AB or 3 in AP MATH BC for MATH 165
  • Need 4-5 in AP MATH BC for MATH 165 and MATH 166
  • Need 6 in IB HL MATH for MATH 100 level, 165
  • Need 4-5 in AP PHYS C-Mechanics for PHYS 221
  • Need 4-5 in AP PHYS C-Elec/Mag for PHYS 222
Orientation Worksheet – Question #3

List all AP/IB credits you will have
(and scores, if known)
Transfer Credits

- The Transfer Credit Evaluation (TCE) 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 toward 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 only credits for transfer courses with a grade of “C” or better and only 65 credits from a 2-year school.
Orientation Worksheet – Question #4

List all transfer courses (and grades, if known)
Plan Your Schedule for Success

• Schedule no more than 3 problem solving courses per semester -- fewer if you have many outside commitments (work, extracurricular activities, etc.)
  • Examples of problem solving classes: MATH, CHEM, COM S, ENGR 160, PHYS
• 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 it is VERY hard to catch up
## Examples of 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>
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<td>LIB 160 (1)</td>
<td>ENGR 160 (3)</td>
<td>CHEM 167 (4)</td>
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<tr>
<td>CHEM 167 (4)</td>
<td>CHEM 177 (4)</td>
<td>ENGR 160 (3)</td>
</tr>
<tr>
<td>MATH 143 (4)</td>
<td>CHEM 177L (1)</td>
<td>ENGR 101 (R)</td>
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<tr>
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<tr>
<td><strong>15 Credits</strong></td>
<td><strong>15 Credits</strong></td>
<td><strong>14 Credits</strong></td>
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Typically take between 13-16 credits
(problem-solving courses shown in **bold**)

**Iowa State University**

**College of Engineering**
Use Support Resources

- Advisers
- Learning Communities
- Student Disability Resources
- Academic Success Center
Advisers: Facilitators of Information

3 Types: Financial Aid, Residential, Academic

Academic Advisers provide:

• Course guidance and selection
• Referrals to resources
• Assistance with making informed career-related decisions
• Student advocacy and support

Advising in the College of Engineering

• Faculty or Professional Adviser (or both), depends on the major
Learning Communities (LC)

- Required - Optional
- Residential - Non-Residential
- Common courses - LC course
- Social activities - Service projects

• All engineering majors offer a Learning Community
  • LC have trained Peer Mentors (upper level engineering students)
  • Many residential LC are already filled

• Other Learning Community Option examples:
  - Honors - WiSE (Women in Science/Engineering)
  - LEAD (Multicultural) - Men of Color

• Talk to your Adviser at your advising appointment about LC options

Free to join!
Learning Community Video
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
- Arrange for accommodations before classes begin—transition from high school to college can be quite challenging
  - **Begin the process this summer.** Forms found online at www.sdr.dso.iastate.edu
  - Meet with SDR staff Day 2 of orientation 1:00-2:30pm at DSO Open House in the Student Services Building Lobby
  - Meet with SDR staff during first week of semester to obtain accommodations notification letter for instructors
- 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
Student Support Resources

• Academic Success Center
  • Supplemental Instruction (SI) - Tutoring Services
  • Academic Coaching

• Help Rooms/Sessions
  • Chemistry    English    Math    Physics

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

Remember, your instructor is a source of help as well…
Future Dates and Deadlines

• Residence halls open:
  • Tuesday and Wednesday, 8/15 and 8/16
    • You will be assigned one of these move-in dates
    • Classes start on Monday, 8/21

• Register for and attend *Destination Iowa State* (registration card in orientation binder):
  • Destination Iowa State begins: Thursday, 8/17
  • Cost is 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
Next . . .

- Cyclone Aide has your advising appointment cards arranged on table in hall
  - Cards listed in alphabetical order by your last name
  - Card has name of Adviser, time, and location of appointment
  - Take your advising appointment card and green sheet to your advising appointment tomorrow

We will begin the Web Registration presentation when everyone has their card.
Please return to your seat after you pick-up your card.
We want you to be successful!

Please ask for help early and often!