



# COLLEGE OF ENGINEERING

IMPACT • ACCESS • INCLUSION



## Undergraduate Advising Form • MECHANICAL ENGINEERING CATALOG 2020-21

<b>SEM 1</b> <b>15</b> <b>HRS</b>	<b>ENGR 10 (0)</b> Freshman Seminar <input type="checkbox"/>	<b>MATH 106 (5)</b> Calculus I <input type="checkbox"/>	<b>CHEM 109 (4)</b> General Chemistry I <input type="checkbox"/>	<b>ENGR 100 (3)</b> Interpersonal Skills for Eng. Leaders OR: COMM 210, 283, or 286 <input type="checkbox"/>	<b>ACE Elective (3)</b> (5, 6, 7, or 9) <input type="checkbox"/>		
<b>SEM 2</b> <b>16</b> <b>HRS</b>	<b>MATH 107 (4)</b> Calculus II <i>Pre: C or better in MATH 106</i> <input type="checkbox"/>	<b>CHEM 110 (4)</b> General Chemistry II <input type="checkbox"/>	<b>PHYS 211 (4)</b> General Physics I Co: MATH 106 <input type="checkbox"/>	<b>PHYS 221 (1)</b> Physics Lab I Co: PHYS 211 <input type="checkbox"/>	<b>CSCE 155N (3)</b> Comp Sci I: Eng. and Science Focus-MATLAB OR: CSCE 155E <input type="checkbox"/>		
<b>SEM 3</b> <b>17</b> <b>HRS</b>	<b>MATH 208 (4)</b> Calculus III <i>Pre: C or better in MATH 107</i> <input type="checkbox"/>	<b>PHYS 212 (4)</b> General Physics II <i>Pre: PHYS 211</i> Co: MATH 107 <input type="checkbox"/>	<b>MECH 223 (3)</b> Statics <i>Pre: C or better in PHYS 211 &amp; MATH 107</i> <input type="checkbox"/>	<b>BSEN 206 (3)</b> Engineering Economics <i>Pre: Sophomore Standing</i> <input type="checkbox"/>	<b>MECH 130 (3)</b> Intro to CAD <input type="checkbox"/>	<b>ENGR 20 (0)</b> Sophomore Seminar <input type="checkbox"/>	
<b>SEM 4</b> <b>16</b> <b>HRS</b>	<b>MATH 221 (3)</b> Diff. Equations <i>Pre: C or better in MATH 107</i> <input type="checkbox"/>	<b>MECH 373 (3)</b> Dynamics <i>Pre: MECH 223 &amp; MATH 208</i> <input type="checkbox"/>	<b>MECH 325 (3)</b> Elastic Bodies <i>Pre: MECH 223 &amp; MATH 208</i> <input type="checkbox"/>	<b>MATL 360 (4)</b> Material Science <i>Pre: PHYS 212 &amp; CHEM 109</i> Co: MECH 223 <input type="checkbox"/>	<b>MECH 200 (3)</b> Engineering Thermo <i>Pre: PHYS 212 &amp; MECH 223</i> <input type="checkbox"/>		
<b>SEM 5</b> <b>16</b> <b>HRS</b>	<b>MECH 230 (3)</b> Intro to Mechanical Engineering Design <i>Pre: MECH 130 &amp; MECH 325</i> <input type="checkbox"/>	<b>MECH 342 (3)</b> Kinematics <i>Pre: MECH 130 &amp; MECH 373</i> <input type="checkbox"/>	<b>MATH 314 (3)</b> Linear Algebra <i>Pre: C or better in MATH 107</i> <input type="checkbox"/>	<b>ECEN 211 (3)</b> Electrical Eng I Co: MATH 107 or PHYS 211 <input type="checkbox"/>	<b>ECEN 231 (1)</b> Electrical Eng Lab Co: ECEN 211 <input type="checkbox"/>	<b>JGEN 200 (3)</b> Technical Communication <input type="checkbox"/>	
<b>SEM 6</b> <b>15</b> <b>HRS</b>	<b>MECH 321 (3)</b> Eng. Statistics & Data Analysis <i>Pre: MATH 208</i> <input type="checkbox"/>	<b>MECH 343 (3)</b> Machine Design <i>Pre: (See Back)</i> —OR— <b>MECH 300 (3)</b> Thermal Systems and Design <i>Pre: (See Back)</i> <input type="checkbox"/>	<b>MECH 350 (3)</b> Dynamics & Controls <i>Pre: MECH 373, ECEN 211, CSCE 155N</i> Co: MATH 314 <input type="checkbox"/>	<b>MECH 310 (3)</b> Fluid Mechanics <i>Pre: MECH 373, MATH 221</i> <input type="checkbox"/>	<b>MECH 380 (3)</b> Mech Eng. Measure <i>Pre: ECEN 231, JGEN 200</i> Co: MECH 350, 310, 321 <input type="checkbox"/>		
<b>SEM 7</b> <b>16</b> <b>HRS</b>	<b>MECH 420 (3)</b> Heat Transfer <i>Pre: MECH 310</i> <input type="checkbox"/>	<b>MECH 370 (3)</b> Manufacturing <i>Pre: MATL 360, MECH 325</i> <input type="checkbox"/>	<b>MECH 446 (2)</b> Design I <i>Pre: MECH 200, 310, 350, &amp; program admission</i> <b>Fa</b> <input type="checkbox"/>	<b>MECH 488 (2)</b> Kinematics / Mechanics Lab <i>Pre: MECH 342</i> Co: MECH 380 <input type="checkbox"/>	<b>MECH Technical Elective (3)</b> <input type="checkbox"/>	<b>ACE Elective (3)</b> (5, 6, 7, or 9) <input type="checkbox"/>	
<b>SEM 8</b> <b>17</b> <b>HRS</b>	<b>MECH 447 (2)</b> Design II <i>Pre: MECH 446 &amp; program admission</i> <b>Sp</b> <input type="checkbox"/>	<b>MECH 487 (2)</b> Thermal Fluids <i>Pre: MECH 380 and MECH 200</i> Co: MECH 420 <input type="checkbox"/>	<b>ENGR 400 (1)</b> Professional Ethics <i>Pre: Sr. standing &amp; program admission</i> <input type="checkbox"/>	<b>MECH Design Elective (3)</b> <input type="checkbox"/>	<b>Senior Elective (3)</b> <input type="checkbox"/>	<b>ACE Elective (3)</b> (5, 6, 7, or 9) <input type="checkbox"/>	<b>ACE Elective (3)</b> (5, 6, 7, or 9) <input type="checkbox"/>

## **MECHANICAL ENGINEERING COLLEGE REQUIREMENTS**

- Students may repeat a maximum of three engineering courses
- Students may take any one engineering course a maximum of two times
- Pass/No Pass is only an option for up to 12 credits of ACE courses in the humanities and social sciences. Pass/No Pass is not an option for other required courses or technical electives
- Students can be reviewed for professional admission twice within one department. If they do not receive professional admission after the second review, they can change their major. If they stay in the College of Engineering they must meet the professional admission criteria of their new major after one review or they must change their major outside of the college.
- Must fulfill the requirements of the catalog year of admission, can change to a subsequent catalog year in consultation with an advisor
- Courses indicated with a "Fa" or "Sp" in the lower, left-hand corner are offered only during the Fall or Spring terms.
- 30 of the last 36 degree hours must be registered for and completed at UNL or UNO
- College probation
  - Students with a cumulative GPA of less than 2.4 will be placed on college probation
  - Students move back to good academic standing when their cumulative GPA is 2.4 or higher
  - Students will be dismissed from the College of Engineering after two sequential semesters on college probation
  - Students cannot graduate from the College of Engineering while on college probation

## **DEPARTMENT REQUIREMENTS**

- PHYS 222 General Physics Lab II (1 cr) may substitute for PHYS 221 General Physics Lab I
- Choose one ACE elective from each of the four ACE Student Learning Outcomes 5, 6, 7, or 9.
- ENGR 200 is recommended for ACE 6 or ACE 9 credit.
- The capstone design sequence must be taken in the order shown in the curriculum and should be taken in the last full academic year (fall-spring) of the program (i.e. MECH 446 in the fall & MECH 447 in the spring).
- Design and technical electives must be chosen from a list of approved 400-level mechanical engineering elective courses provided by the department every semester.
- Senior electives may be either another mechanical engineering technical elective, another mechanical engineering design elective, or, with prior written approval from your advisor, a 300 or higher level engineering, science, or math course.
- Students may choose to complete either MECH 300 or 343 in the sixth semester. If both courses are taken, one may count as the senior elective.
  - MECH 343 Prerequisites:
    - MECH 325; BSEN 206; JGEN 200 or 300; MECH 342; MATL 360; MECH 321 or STAT 380 or parallel (i.e. "co")
  - MECH 300 Prerequisites:
    - MECH 200 and CSCE 155N
- Professional admission - mechanical engineering students will be reviewed for professional admission upon completion of MECH 223 and 43 credit hours (and 12 UNL credit hours for transfer students). To be granted professional admission, a student must:
  - Earn a major GPA of 2.7 or higher at time of review
  - Have no more than 4 withdrawals on their record
  - Have no more than 3 repeated courses
  - One must earn professional admission after two reviews or change their major. The second review will occur in the subsequent semester of first review.

*Complete departmental and college policies found at <https://catalog.unl.edu>*