

# MECHANICAL ENGINEERING

Recommended Program Sequence

**Bachelor of Science Degree**

**(66 Units in Engineering, 123 Total Units)**

|                  |                     |                        |  |
|------------------|---------------------|------------------------|--|
| Student: _____   | ID# _____           | Adviser: _____         |  |
| Telephone: _____ | Catalog Year: _____ | Graduation Date: _____ |  |
| Email: _____     |                     |                        |  |

## ADVISING SHEET

**MAJOR CODE: 054402**

**2022-2023**

### 1st (Fall) SEMESTER

|                         |                 | Units | Grade | Sem   | Trnsfr |
|-------------------------|-----------------|-------|-------|-------|--------|
| ME 1                    | Intro to ME     | 1     | _____ | _____ | _____  |
| ME 26                   | Engr Graphics   | 3     | _____ | _____ | _____  |
| ECE71/CSCI40            | (Intro Prog)    | 3/4   | _____ | _____ | _____  |
| GE Area A2              | ENGL 10         | 3     | _____ | _____ | _____  |
| MATH 75*                | Math Analysis 1 | 4     | _____ | _____ | _____  |
| GE Area B2 <sup>2</sup> | Life Sciences   | 3     | _____ | _____ | _____  |
|                         |                 | 17/18 |       |       |        |

### 2nd (Spring) SEMESTER

|            |                   | Units | Grade | Sem   | Trnsfr |
|------------|-------------------|-------|-------|-------|--------|
| ME 2       | Cmpt App in ME    | 1     | _____ | _____ | _____  |
| CHEM 1A    | Gen Chemistry     | 3     | _____ | _____ | _____  |
| CHEM 1AL   | Gen Chemistry Lab | 2     | _____ | _____ | _____  |
| Math 76    | Math Analysis II  | 4     | _____ | _____ | _____  |
| PHYS 4A    | Mech+Wave Motion  | 3     | _____ | _____ | _____  |
| PHYS 4AL   | Mech+Wave Lab     | 1     | _____ | _____ | _____  |
| GE Area D1 | HIST 11 or 12     | 3     | _____ | _____ | _____  |
|            |                   | 17    |       |       |        |

### 3rd (Fall) SEMESTER

|            |                    |    |       |       |       |
|------------|--------------------|----|-------|-------|-------|
| ME 31      | Engr Materials     | 3  | _____ | _____ | _____ |
| ME 32      | Engr Materials Lab | 1  | _____ | _____ | _____ |
| MATH 77    | Math Analysis III  | 4  | _____ | _____ | _____ |
| PHYS 4B    | Elec+Mag+Heat      | 3  | _____ | _____ | _____ |
| GE Area A1 | Oral Communication | 3  | _____ | _____ | _____ |
| GE Area C2 | PHIL 20            | 3  | _____ | _____ | _____ |
|            |                    | 17 |       |       |       |

### 4th (Spring) SEMESTER

|                      |                    |    |       |       |       |
|----------------------|--------------------|----|-------|-------|-------|
| ME 95                | Manuf Processes    | 2  | _____ | _____ | _____ |
| CE 20                | Engr Mech: Statics | 3  | _____ | _____ | _____ |
| ECE 90               | Prin Elec Cir      | 3  | _____ | _____ | _____ |
| ECE 90L              | Prin Elec Cir Lab  | 1  | _____ | _____ | _____ |
| Math 81 <sup>4</sup> | Applied Analysis   | 3  | _____ | _____ | _____ |
| PHYS 4C              | Light+Mod Phys     | 3  | _____ | _____ | _____ |
| PLSI 2               | Amer Govt          | 3  | _____ | _____ | _____ |
|                      |                    | 18 |       |       |       |

### 5th (Fall) SEMESTER

|        |                   |    |       |       |       |
|--------|-------------------|----|-------|-------|-------|
| ME 112 | Engr Mech: Dyn    | 3  | _____ | _____ | _____ |
| ME 115 | Instru & Meas Lab | 1  | _____ | _____ | _____ |
| ME 136 | Thermodynamics    | 3  | _____ | _____ | _____ |
| ME 125 | Engr Stat & Expt  | 3  | _____ | _____ | _____ |
| CE 121 | Mech of Mtls      | 3  | _____ | _____ | _____ |
|        |                   | 13 |       |       |       |

### 6th (Spring) SEMESTER

|                     |                    |    |       |       |       |
|---------------------|--------------------|----|-------|-------|-------|
| ME 116              | Fluid Mechanics    | 3  | _____ | _____ | _____ |
| ME 118**            | Fluid Mech Lab     | 1  | _____ | _____ | _____ |
| ME 156              | Adv Thermo         | 3  | _____ | _____ | _____ |
| ME 134 <sup>1</sup> | Kinematics of Mach | 3  | _____ | _____ | _____ |
| ME 140              | Adv Engr Analysis  | 3  | _____ | _____ | _____ |
|                     |                    | 13 |       |       |       |

### 7th (Fall) SEMESTER

|  |                      | Units    | Grade | Sem   | Trnsfr |
|--|----------------------|----------|-------|-------|--------|
| <b>Technical Area Course<sup>3</sup></b> |                      | <b>3</b> |       |       |        |
| ME 135**                                 | Intro Desgn-Sr Cap I | 3        | _____ | _____ | _____  |
| ME 145                                   | Heat+Mass Trans      | 3        | _____ | _____ | _____  |
| ME 154                                   | Dsgn of Mach Elem    | 3        | _____ | _____ | _____  |
| GE Area D2 <sup>2</sup>                  | Social Sciences      | 3        | _____ | _____ | _____  |
|  |                      | 15       |       |       |        |

### 8th (Spring) SEMESTER

|  |                   | Units    | Grade | Sem   | Trnsfr |
|--|-------------------|----------|-------|-------|--------|
| <b>Technical Area Course<sup>3</sup></b> |                   | <b>3</b> |       |       |        |
| ME 155                                   | Sr Cap Design II  | 3        | _____ | _____ | _____  |
| ME 166                                   | Energy Sys Design | 3        | _____ | _____ | _____  |
| ME 159                                   | Mech Sys Dsgn Lab | 1        | _____ | _____ | _____  |
| GE Area F                                | Ethnic Studies    | 3        | _____ | _____ | _____  |
|  |                   | 15       |       |       |        |

<sup>1</sup>Also counts as major GPA

<sup>2</sup>See Catalog for GE Courses

<sup>3</sup>Take a minimum of 6 units in Group A (ME 122, 137, 142, 144, 146, 162 or 164 (to be offered in alternate years)). A maximum of 3 units from Group B (ME 180, 190, 191T) may be substituted for a course in Group A with faculty advisor's approval.

<sup>4</sup>ENGR 101 may be taken as an alternative for Math 81 with faculty advisor's approval

\*Math 75 is a pre/co-requisite for all engineering courses except ME 1.

\*\*NOTE: Department approved writing course or equivalent must be taken in the junior year, prior to taking ME118 and ME135, if the student fails the writing exam requirement.

**Must have a minimum grade of "C" or better on all math, science, and engineering courses.**

# MECHANICAL ENGINEERING

Bachelor of Science Degree

## 1 Major Requirements (66 units) and additional requirements (21 units)

ME 1, 2, 26, 31, 32, 95, 112, 115, 116, 118, 125, 135, 136, 140, 145, 154, 156 (40 units)  
CE 20, 121 (7 units)  
ECE 71 or CSCI 40, ECE 90, 90L (7 units)

## Tele| Design Applications (7 units)

ME 155, 159, 166

## Technical Area Courses (6 units)

Take a minimum of 3 units in Group A (ME 122, 137, 142, 144, 146, 162, or 164)

A maximum of 3 units in Group B (ME 180, 190, 191T; ECE 121, 121L, 155) may be substituted for a course in Group A with faculty advisor's approval

## Additional requirements (21 units)

MATH 76, 77, 81\* (See Advising Note 6), PHYS 4A, 4AL, 4B, 4C

## 2 General Education requirements (49 units)\*\*

COMM 3, 7, or \* (GE Area A1); ENGL 10 (GE Area A2); HIST 11 or 12 (GE Area D1); select one course from each of the following GE Areas: B2, D2, and F; for C1 requirement, no additional course is necessary because the following ME major courses are double counted to satisfy this (ME 26 and ME95).

The following courses are required to satisfy both GE and major requirements:

CHEM 1A/1AL (GE Area B1)

MATH 75 (GE Area B4)

PHIL 20 (GE Area C2)

ME 134 (BE Area IB)

For PHIL 120 (GE Area IC) requirement, no additional course is necessary because the following ME major courses are doubled counted to satisfy this (ME 135, ME 155, and ME 166)

## 3 Other requirements (9 units)

American Government and Institutions (PLSI 2), Multicultural and International (MI), and Upper-division writing. Note: Mechanical Engineering majors are exempt from the MI requirement.

Poli Sci

4 Sufficient elective units to meet required total units (if needed) (See Degree Requirements)

## 5 Total (123 units)

\* ENGR 101 may be taken as an alternative with faculty advisor's approval.

\*\* Engineering majors are exempt from GE areas A3, E, ID, and the third course in Area C

## Advising Notes

- 1 All LCOE students can enroll in ME 112 and ME136 without permission numbers if they have fulfilled the prerequisite requirements. For all other upper-division ME courses, non-ME majors must have permission numbers approved by the ME department chair.
- 2 Courses in mathematics, the physical sciences, or engineering taken CR/NC are not counted toward fulfillment of degree requirements in Mechanical Engineering.
- 3 Mechanical engineering majors might consider a math, physics, or business minor.
- 4 Since the mechanical engineering major curriculum is very demanding, many students, especially those not fully prepared in mathematics, GE A chemistry, and/or physics, take 4-1/2 or more years to graduate rather than the traditional 4 years.
- 5 Advising is mandatory in the Lyles College of Engineering. A registration hold will be placed on students who fail to see their advisor at least once per academic year.
- 6 The Upper-Division Writing Skills requirement has to be completed no sooner than the term in which 60 units of coursework are completed or not later than the term in which 90 units are completed. This requirement can be met by passing the university writing examination or by taking ENGR 105W or a department-approved writing course. Must be taken and passed with a letter grade of C or better in the junior year if the student fails the writing exam requirement.
- 7 With faculty advisor approval, ENGR 101 may be taken instead of MATH 81.
- 8 All courses in Math, Science, and Engineering used in the BSME curriculum must be passed with a letter grade of C or better.