

# Navajo Technical University

Name: \_\_\_\_\_

ID#: \_\_\_\_\_

## Bachelor of Science Degree – Mechanical Engineering (124-125 Credits)

A Bachelor's degree in Mechanical Engineering requires 123 credit hours. It is designed for a four-year program of study. The minimum credit load for a full-time student is 12 credit hours per semester. A student must complete general courses and general education electives within the first two years of study with a grade point average of 2.0 or better before taking upper level core courses (300 and 400-level). To complete the program within four years, a credit load of 15 to 18 credits per semester is recommended. This time can be reduced by attending summer sessions and/or intersessions.

| Semester ONE   |  | Credits                 | Prerequisites                      | Semester/Transfer | Grade |
|----------------|--|-------------------------|------------------------------------|-------------------|-------|
| ENGL 1110      | Composition I                          | 3                       | ENGL100                            |                   |       |
| MATH 1510      | Calculus I                             | 4                       | MATH 1230&MATH1240                 |                   |       |
| ENGR 123       | Computer Skills for Engineering        | 3                       |                                    |                   |       |
| ENGR 130       | Engineering Graphics                   | 3                       |                                    |                   |       |
| ENGR 101       | Fundamentals of Electrical Engineering | 3                       | MATH 1215                          |                   |       |
| SSC 100        | College Success Skills                 | 1                       |                                    |                   |       |
| Semester TWO   |  |                         |                                    |                   |       |
| ENGL 2210      | Professional Technical Communication   | 3                       |                                    |                   |       |
| NAVA XXX       | Dine Studies Course                    | 3-4                     |                                    |                   |       |
| CHEM 1120C     | Introduction to Chemistry              | 4                       |                                    |                   |       |
| ENGR 103       | Introduction to Engineering            | 3                       |                                    |                   |       |
| ENGR 230       | Advanced Engineering Graphics          | 3                       | ENGR 130                           |                   |       |
| Semester THREE |  |                         |                                    |                   |       |
| MATH 1520      | Calculus II                            | 4                       | MATH 1510                          |                   |       |
| ME 345         | Statics                                | 3                       | MATH 1230                          |                   |       |
| PHYS 1310C     | Calculus-Based Physics I               | 4                       | MATH 1220, MATH 1230, or MATH 1240 |                   |       |
| IE 213         | Structure and Properties of Materials  | 3                       | PHYS 1230C, CHEM 1120C             |                   |       |
| SSCXXX         | Social and Behavioral Science          | 3                       |                                    |                   |       |
| Semester FOUR  |  |                         |                                    |                   |       |
| MATH 2530      | Calculus III                           | 4                       | MATH 1520                          |                   |       |
| IE 243         | Strength of Materials                  | 3                       | IE 213                             |                   |       |
| HUMN 1180      | History of American Indians in Media   | 4                       |                                    |                   |       |
| PHYS 1320C     | Calculus – Based Physics II            | 4                       | PHYS 1310C                         |                   |       |
| ENGR 169       | Basic Statistics and Probability       | 3                       | MATH 1215                          |                   |       |
| Semester FIVE  |  |                         |                                    |                   |       |
| MATH 2410      | Differential Equations                 | 4                       | MATH 1520                          |                   |       |
| ME 356         | Machine Design                         | 4                       | ME 345 & IE 243                    |                   |       |
| ENGL 2310      | Creative Writing                       | 3                       |                                    |                   |       |
| IE 223         | Design and Manufacturing Processes     | 3                       |                                    |                   |       |
| Semester SIX   |  |                         |                                    |                   |       |
| ME 354         | Thermodynamics                         | 3                       | PHYS 1230C & MATH 1510             |                   |       |
| MTH 433        | Numerical Analysis with Computers      | 3                       | MATH 1520 & MATH 2410              |                   |       |
| ME 353         | Fluid Mechanics                        | 2(Theory)<br>+ 1 ( lab) | PHYS 1230C, & MATH 1510            |                   |       |
| ME 331         | Kinematics of Machinery                | 3                       | MATH 1230                          |                   |       |
| ME 305         | System Dynamics                        | 3                       | MATH 2410                          |                   |       |
| Semester SEVEN |  |                         |                                    |                   |       |
| ME 400         | Capstone Project I                     | 3                       | ME 331 & ME 356                    |                   |       |
| ME XXX         | ME Elective                            | 3                       |                                    |                   |       |
| ME 405         | Heat Transfer                          | 3                       | ME 354                             |                   |       |
| IE 433         | Metrology and Measurements             | 3                       | IE 223                             |                   |       |
| ME 316         | Mechanical Laboratory                  | 3                       |                                    |                   |       |
| Semester EIGHT |  |                         |                                    |                   |       |
| ME XXX         | ME Elective                            | 3                       |                                    |                   |       |
| AMT 370        | Robotics                               | 3                       |                                    |                   |       |

|                             |                     |         |        |  |  |
|-----------------------------|---------------------|---------|--------|--|--|
| ME 410                      | Capstone Project II | 3       | ME 400 |  |  |
| ME XXX                      | ME Elective         | 3       |        |  |  |
| TOTAL REQUIRED CREDIT HOURS |                     | 124-125 |        |  |  |

Listing of Technical Electives:

ME 401 Introduction to Artificial Intelligence    ME 407 Finite Element Analysis  
ME 404 Compliant Mechanisms                    ME 409 Renewable Energy Sys.  
ME 406 Gas Dynamics & Space Propulsion    ME 415 Additive Manufacturing 2 (Theory)+1(lab)  
IE 388 Safety Engineering

|                  |            |      |
|------------------|------------|------|
|                  | Signatures | Date |
| Student:         |            |      |
| Advisor:         |            |      |
| Registrar:       |            |      |
| Graduation Date: |            |      |

Created 6/17/2024