

# Navajo Technical University

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

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

## Bachelor of Science Degree – Industrial Engineering (123-124 Credits)

A Bachelor's degree in Industrial Engineering requires **122** credit hours and is designed for a four- year program of study. Students in the baccalaureate degree programs are required to complete a minimum of 30 credit hours in the upper division courses, i.e., 300 and 400 level courses before they can graduate. The minimum credit load for a full-time student is 12 credit hours per semester.

- **General Education Requirements -22 Credits**
- **Core IE Requirements - 72 Credits**
- **Mathematics and Sciences - 26 Credits**
- **Technical Electives - 3 Credits**

| Semester ONE   |                                       | Credits | Prerequisites   | Semester/Transfer | Grade |
|----------------|---------------------------------------|---------|---|-------------------|-------|
| ENGL 1110      | Composition I                         | 3       | ENGL100   |                   |       |
| EE 101         | Electrical Engineering                | 3       |   |                   |       |
| MATH 1510      | Calculus I                            | 4       | MATH1230&MATH1240   |                   |       |
| ENGR 130       | Engineering Graphics                  | 3       |   |                   |       |
| ENGR 123       | Computer Skills for Engineering       | 3       |   |                   |       |
| SSC 100        | College Success Skills                | 1       |   |                   |       |
| Semester TWO   |                                       |         |   |                   |       |
| CS 101         | Programming I                         | 3       |   |                   |       |
| ENGR 103       | Introduction to Engineering           | 3       |   |                   |       |
| ENGR 230       | Advanced Engineering Graphics         | 3       | ENGR130   |                   |       |
| ENGR 169       | Basic Statistics and Probability      | 3       | MATH 1220   |                   |       |
| PHYS 1230C     | Algebra Based Physics I               | 4       | MATH 1215   |                   |       |
| Semester THREE |                                       |         |   |                   |       |
| MATH 1520      | Calculus II                           | 4       | MATH1510  |                   |       |
| CHEM 1120C     | Introduction to Chemistry             | 3       |   |                   |       |
| ENGL 2210      | Professional & Technical Comm.        | 3       |   |                   |       |
| IE 223         | Design & Manufacturing Processes I    | 3       |   |                   |       |
| ENGR 236       | Inferential Engineering Statistics    | 3       |   |                   |       |
| Semester FOUR  |                                       |         |   |                   |       |
| NAVA XXX       | Dine Studies course                   | 3-4     |   |                   |       |
| IE 343         | Design & Manufacturing Processes II   | 3       | IE223   |                   |       |
| IE 213         | Structure & Properties of Materials   | 3       | PHYS1230C, CHEM1120C  |                   |       |
| IE 235         | Lean Production                       | 3       |   |                   |       |
| CFA XXX        | Creative and Fine Arts Course         | 3       |   |                   |       |
| Semester FIVE  |                                       |         |   |                   |       |
| IE 380         | Project Management                    | 3       |   |                   |       |
| HUMN 1180      | History of American Indians in Media  | 3       |   |                   |       |
| ME 345         | Statics                               | 3       | MATH1230  |                   |       |
| MTH 410        | Linear Algebra                        | 3       | MATH1520  |                   |       |
| ENGR 313       | Engineering Economics                 | 3       |   |                   |       |
| Semester SIX   |                                       |         |   |                   |       |
| MATH 2410      | Differential Equations                | 4       | MATH1520  |                   |       |
| HIST 1120      | United States History II              | 3       | Prerequisite: C or better in ENGL-100 or permission of the instructor |                   |       |
| IE 323         | Human Factors in Product Design       | 3       | ENGR236   |                   |       |
| XXX            | Technical Elective – Advisor Approval | 3       |   |                   |       |
| IE 363         | Design of Experiment                  | 3       | ENGR236   |                   |       |
| Semester SEVEN |                                       |         |   |                   |       |
| IE 413         | Quality Control                       | 3       | IE363   |                   |       |
| IE 433         | Metrology & Instrumentation           | 3       | I223  |                   |       |
| IE 453         | Operations Research                   | 3       | ENGR236 & MATH1520  |                   |       |
| IE 423         | Capstone I                            | 3       | IE 223, IE 343, IE 380  |                   |       |
| Semester EIGHT |                                       |         |   |                   |       |
| IE 424         | Capstone II                           | 3       | IE423   |                   |       |
| IE 463         | Facility Planning & Design            | 3       | ENGR313   |                   |       |

|  |                                     |                |         |  |  |
|--|-------------------------------------|----------------|---------|--|--|
| IE 473   | Inventory Control & Production Plan | 3              | ENGR313 |  |  |
| IE 494   | System Simulation                   | 3              | ENGR236 |  |  |
| <b>Fundamentals of Engineering Examination</b> |                                     | <b>NC</b>      |         |  |  |
| <b>Summer Session</b>                          |                                     |                |         |  |  |
| IE 312   | Summer Internship                   | 3              |         |  |  |
| <b>TOTAL REQUIRED CREDIT HOURS</b>             |                                     | <b>123-124</b> |         |  |  |

|                  |                   |             |
|------------------|-------------------|-------------|
|                  | <b>Signatures</b> | <b>Date</b> |
| Student:         |                   |             |
| Advisor:         |                   |             |
| Registrar:       |                   |             |
| Graduation Date: |                   |             |

*Updated 7/16/2024*