

**BSME - MECHANICAL ENGINEERING DEGREE PLAN**  
**(2025-2026 Catalog Total 126 hours) CHECK LIST**

STUDENT NAME \_\_\_\_\_

UIN \_\_\_\_\_

ADVISOR \_\_\_\_\_

Pre-requisites marked in red may be taken concurrently.

| YEAR 1                    |                                                                                                                     | First Semester | Hrs | Sem. Passed | Second Semester           |                                                                                              | Hrs | Sem. Passed |
|---------------------------|---------------------------------------------------------------------------------------------------------------------|----------------|-----|-------------|---------------------------|----------------------------------------------------------------------------------------------|-----|-------------|
| MATH 2413                 | Calculus I<br>(Pre-req: (MATH 1314 & MATH 1316)<br>OR MATH 1511)                                                    |                | 4   |             | CHEM 1403                 | Chemistry for Engineers<br>(Pre-req: CHEM 1303 OR CHEM 1311)                                 | 4   |             |
| ELEG 1304                 | Computer Applications in Engineering<br>(Pre-req: MATH 1314 OR MATH 1511 OR<br>MATH 1316 OR MATH 2413 OR MATH 2414) |                | 3   |             | CHEM 1112                 | General Chemistry Lab II<br>(Pre-Req: (MATH 1314 OR MATH 1511)<br>& (CHEM 1403 OR CHEM 1304) | 1   |             |
| MCEG 1101                 | Intro Engr Cs Tech<br>(Co-requisite: MCEG 1102)                                                                     |                | 1   |             | PHYS 2325                 | University Physics I<br>(Pre-Req: MATH 2413)                                                 | 3   |             |
| MCEG 1102                 | Intro to Mech Engr Drawing & Design<br>Lab 1                                                                        |                | 1   |             | PHYS 2125                 | University Physics Lab I<br>(Pre-req: PHYS 2325)                                             | 1   |             |
| ENGL 1301                 | Freshman Composition I<br>(Communication Core)                                                                      |                | 3   |             | MATH 2414                 | Calculus II (Pre-req: MATH 2413)                                                             | 4   |             |
|                           | Component Area Option Two Core                                                                                      |                | 3   |             | ENGL 2311 or<br>ENGL 1302 | Technical & Business Writing or<br>Freshman Composition II<br>(Communication Core)           | 3   |             |
| Total                     |                                                                                                                     |                | 15  |             | Total                     |                                                                                              | 16  |             |
| YEAR 2                    |                                                                                                                     | First Semester | Hrs | Sem. Passed | Second Semester           |                                                                                              | Hrs | Sem. Passed |
|                           | American History Core                                                                                               |                | 3   |             | MATH 2320                 | Differential Equations<br>(Pre-req: MATH 2414)                                               | 3   |             |
| CVEG 2301                 | Engineering Mechanics 1<br>(Pre-req: PHYS 2325)                                                                     |                | 3   |             | MCEG 2301                 | Thermodynamics I<br>(Pre-req: MATH 2414 & PHYS 2325)                                         | 3   |             |
| POSC 2305                 | American Government                                                                                                 |                | 3   |             | MCEG 2302                 | Engineering Mechanics II<br>(Pre-req: CVEG 2301)                                             | 3   |             |
| MCEG 2303                 | Material Science and Engineering<br>(Pre-Req: CHEM 1303 OR CHEM 1403<br>or CHEM 1304)                               |                | 3   |             | CVEG 2332                 | Mechanics of Materials<br>(Pre-req: (CVEG 2301 or CVEG 2400) &<br>MATH 2414)                 | 3   |             |
| PHYS 2326                 | University Physics II<br>(Pre-req: PHYS 2325 & MATH 2414)                                                           |                | 3   |             | MATH 3302                 | Probability and Statistics<br>(Pre-req: MATH 2414)                                           | 3   |             |
| PHYS 2126                 | University Physics Lab II<br>(Pre-req: PHYS 2326)                                                                   |                | 1   |             | CHEG 2308                 | Eco Anal Technical Application<br>(Social & Behavioral Science Core)                         | 3   |             |
| Total                     |                                                                                                                     |                | 16  |             | Total                     |                                                                                              | 18  |             |
| YEAR 3                    |                                                                                                                     | First Semester | Hrs | Sem. Passed | Second Semester           |                                                                                              | Hrs | Sem. Passed |
| MCEG 3304                 | Machine Design I<br>(Pre-Req: CVEG 2332 & MCEG 1102)                                                                |                | 3   |             | MCEG 3302                 | Thermodynamics II<br>(Pre-req: MCEG 2301 & MATH 2414)                                        | 3   |             |
| MCEG 3101                 | Measurement and Instrumentation Lab.<br>(Pre-req: PHYS 2325 & PHYS 2125 & PHYS<br>2126)                             |                | 1   |             | ELEG 2315                 | Introduction to Electrical Engr.<br>(Pre-req: MATH 2320 & PHYS 2326)                         | 3   |             |
| MATH 4317                 | Advanced Math for Engineers<br>(Pre-req: MATH 2320)                                                                 |                | 3   |             | MCEG 3303                 | Manufacturing Processes<br>(Pre-req: MCEG 2303)                                              | 3   |             |
| MCEG 3305                 | Kinematic Design and Analysis<br>(Pre-req: MCEG 1102 & MCEG 2302)                                                   |                | 3   |             | MCEG 3103                 | Manufacturing Processes Lab I<br>(Co-req: MCEG 3303)                                         | 1   |             |
| MCEG 3306                 | Fluid Mechanics<br>(Pre-req: MCEG 2301 & MATH 2320 & MCEG<br>2302)                                                  |                | 3   |             | MCEG 4304                 | Machine Design II<br>(Pre-req: MCEG 3304 & MCEG 3305)                                        | 3   |             |
|                           | Creative Arts Core                                                                                                  |                | 3   |             | POSC 2306                 | Texas Government                                                                             | 3   |             |
| Total                     |                                                                                                                     |                | 16  |             | Total                     |                                                                                              | 16  |             |
| YEAR 4                    |                                                                                                                     | First Semester | Hrs | Sem. Passed | Second Semester           |                                                                                              | Hrs | Sem. Passed |
| MCEG 4309                 | Finite Element Analysis and Design<br>(Pre-req: CVEG 2332 & MCEG 3301)                                              |                | 3   |             | MCEG 4306                 | Dynamic Systems and Controls<br>(Pre-req: MCEG 2302 & MATH 2320)                             | 3   |             |
| MCEG 4247                 | Senior Design and Professionalism I<br>(Pre-req: MCEG 3304 & MCEG 3101 &<br>MCEG 3302 & MCEG 3301)                  |                | 2   |             | MCEG 4248                 | Senior Design & Professionalism II<br>(Pre-req: MCEG 4247)                                   | 2   |             |
| MCEG 3102                 | Thermal Science Lab I<br>(Pre-req: MCEG 3101 & MCEG 3301 & ELEG 1304)                                               |                | 1   |             |                           | American History Core                                                                        | 3   |             |
| MCEG 3301                 | Heat Transfer<br>(Pre-req: MATH 2320 & MCEG 3306)                                                                   |                | 3   |             |                           | Language, Philosophy, and<br>Culture Core                                                    | 3   |             |
| CVEG 2304                 | Global Development Issues<br>(Component Area Option One Core)                                                       |                | 3   |             |                           | Technical Elective                                                                           | 3   |             |
| MCEG 3XXX<br>or MCEG 4XXX | MCEG Technical Elective                                                                                             |                | 3   |             |                           |                                                                                              |     |             |
| Total                     |                                                                                                                     |                | 15  |             | Total                     |                                                                                              | 14  |             |

## Core Electives

### COMMUNICATION

|                                  |                                   |                                          |
|----------------------------------|-----------------------------------|------------------------------------------|
| ENGL 1301 Freshman Composition I | ENGL 1302 Freshman Composition II | ENGL 2311 Technical and Business Writing |
|----------------------------------|-----------------------------------|------------------------------------------|

### LANGUAGE, PHILOSOPHY, AND CULTURE

|                                      |                                              |                                   |
|--------------------------------------|----------------------------------------------|-----------------------------------|
| ARCH 1301 Architectural History I    | ENGL 2334 Studies in Literature              | PHIL 2306 Ethics                  |
| ARCH 1302 History of Architecture II | ENGL 2341 Introduction to Literature         | SPAN 2311 Intermediate Spanish I  |
| ARTS 1303 Art History I              | HUMA 1301 Introduction to Humanities         | SPAN 2312 Intermediate Spanish II |
| ARTS 1304 Art History II             | HUMA 1305 Survey of Mexican-American Culture |                                   |
| ENGL 2331 Survey of World Literature | PHIL 2303 Critical Thinking                  |                                   |

### CREATIVE ARTS

|                                  |                                       |                                      |
|----------------------------------|---------------------------------------|--------------------------------------|
| ARCH 1303 Architectural Design I | DRAM 1310 Introduction to Theatre     | MUSC 1306 Music in Contemporary Life |
| ARTS 1301 Art Appreciation       | DRAM 2322 African American Theatre II | MUSC 2333 Afro-American Music        |
| ARTS 2328 African American Art   | HCOL 1321 Honors Colloquium II        | MUSC 2334 Survey of World Music      |
| COMM 2300 Media Literacy         | MUSC 1303 Fundamentals of Music       |                                      |

### AMERICAN HISTORY

|                                   |                                    |                         |
|-----------------------------------|------------------------------------|-------------------------|
| HIST 1301 United States History I | HIST 1302 United States History II | HIST 2301 Texas History |
|-----------------------------------|------------------------------------|-------------------------|

### SOCIAL AND BEHVIORAL SCIENCES

|                                                        |                                                                 |                                                    |
|--------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------|
| AFAM 1301 Race Class and Gender in America             | FINA 2313 Financial Planning from a Global Perspective          | POSC 2321 Blacks and the American Political System |
| AGRI 1330 Land Grand System and Global Food Security   | GEOG 1302 Introduction to Human Geography                       | POSC 2350 Global Issues                            |
| CHEG 2308 Eco Anal Technical Application               | HDFM 2351 Childhood Disorders                                   | PSYC General Psychology                            |
| CRIJ 1301 Introduction to Criminal Justice             | HDFM 2353 The Contemporary Family in Cross-Cultural Perspective | PSYC Child Psychology                              |
| CRIJ 1307 Crime in America                             | HDFM 2353 Human Development: Life Span                          | PSYC Psychology of Personality                     |
| ECON 1301 Fundamental of Economics in a Global Society | HIST 2321 World Civilizations I                                 | SOCG 1301 General Sociology                        |
| ECON 2301 Principles of Macroeconomics                 | HIST 2322 World Civilizations II                                | SOCG 1306 Social Problems                          |
| ECON 2302 Principles of Microeconomics                 | MGMT 2326 Leadership in a Global Environment                    | SOCG 2319 Sociology of Minorities                  |

### COMPONENT AREA OPTION ONE

|                                                       |                                                        |                                          |
|-------------------------------------------------------|--------------------------------------------------------|------------------------------------------|
| AGRI 1330 Land Grand System and Global Food Security  | FINA 2313 Financial Planning from a Global Perspective | MISY 1305 Business Computer Applications |
| CHEG 2316 Ethical Engineering in a Global Society     | HIST 2321 World Civilizations I                        | POSC 2350 Global Issues                  |
| CURR 2300 Global Influences on Teacher Education      | HIST 2322 World Civilizations II                       | SOCG 1306 Social Problems                |
| ECON 1301 Fundamentals of Economics in Global Society | MGMT 2326 Leadership in a Global Environment           |                                          |

### COMPONENT AREA OPTION TWO

|                                                |                                            |                                          |
|------------------------------------------------|--------------------------------------------|------------------------------------------|
| ARCH 1327 Multimedia Digital Application       | COMP 1300 Digital Communication            | MISY 1305 Business Computer Applications |
| COMM 1311 Introduction to Speech Communication | CURR 1300 Principles of Effective Learning |                                          |
| COMM 1318 Interpersonal Communication          | HLTH 1304 Personal Health and Wellness     |                                          |

### SUGGESTED TECHNICAL ELECTIVES

|                                                  |                                           |                                                      |
|--------------------------------------------------|-------------------------------------------|------------------------------------------------------|
| MCEG 3307 Automatic Controls                     | CHEG 4313 Process Modeling and Simulation | CVEG 4304 Systems Engineering                        |
| MCEG 3319 Introduction to Robotics               | CHEG 4315 Bioengineering                  | ELEG 3303 Physical Principles of Solid State Devices |
| MCEG 4308 Design Thinking and Device Development | CVEG 3304 Structural Analysis             | MATH 3307 Linear Algebra                             |
| MCEG 4316 Special Topics                         | CVEG 3301 Environmental Engineering       | MATH 4306 Numerical Analysis                         |
| MCEG 4318 Gas Dynamics                           | CVEG 4303 Water Resources Engineering     |                                                      |