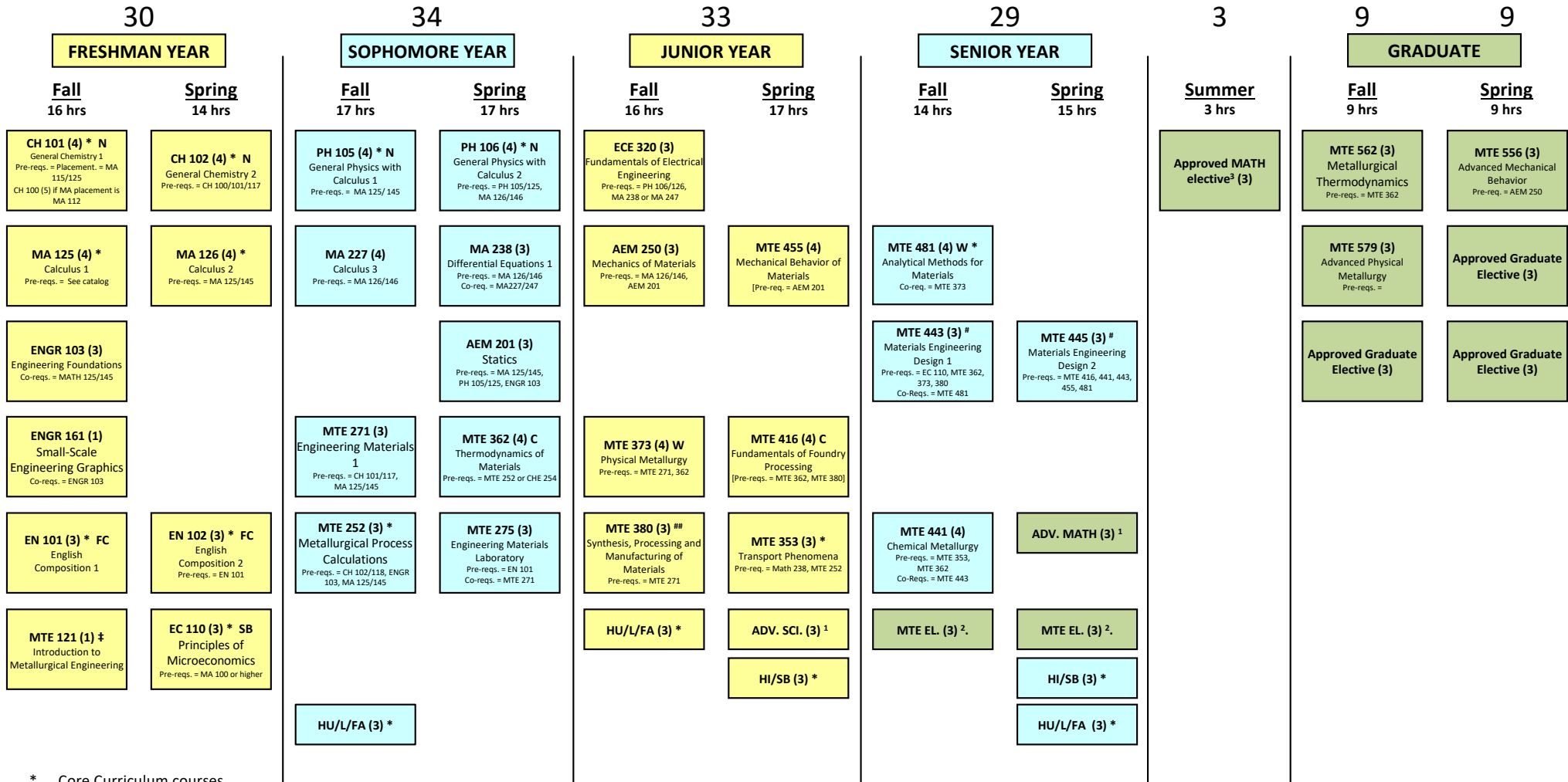


SCHOLARS PROGRAM ROADMAP (BS-MTE / MS-MTE(2))

Metallurgical & Materials Engineering Curriculum – BS MTE Degree – Revised 2016-- Effective Spring 2017

146 hrs total



* Core Curriculum courses

Senior standing

or ME 383/283

‡ MTE 121 is recommended, but can be satisfied by taking ENGR 111 or other engineering intro courses.

1. A list of acceptable science and math electives is available in the metallurgical and materials engineering department office. These courses must be taken at 400-level or higher. Prior approval must be obtained from the Instructor, Graduate Director and the Graduate School before the semester begins. All other coursework to count toward the Graduate degree must be taken at the 500-level or higher.
2. MTE Students may take up to six (6) hours of MTE 400-level coursework with prior approval from the Instructor, Graduate Director and the Graduate School before the semester begins. All other coursework to count toward the Graduate degree must be taken at the 500-level or higher.
3. A course in engineering-related mathematics (e.g., statistics, linear algebra, advanced calculus, or other math-based course that has been approved by the Department)

This is an unofficial flowchart prepared to assist students in planning their coursework. The UNIVERSITY CATALOG contains the official listing of academic information. The MTE Department may change prerequisites and corequisites from time to time as course content changes to keep pace with changing technology. These changes are posted on the academic bulletin board outside the Department office. Students should consult the CATALOG and Department bulletin board prior to registration. Revised Spring Semester 2016.

Policy on MTE Electives

Each student may select any two MTE electives to satisfy the requirements of MTE elective courses. The technical elective requirement may be satisfied with an additional MTE elective or a 300 level or higher “materials-related” engineering, math, or science course by prior petition.

Policy on Humanities and Social Science Electives

Students must satisfy College of Engineering Core curriculum requirements. These include 9 semester hours of humanities (HU), literature (L), and arts (FA) courses. Nine semester hours are also required in history (HI) and social and behavioral sciences (SB). Six of these 18 semester hours must be from a single discipline (Depth Study). There is no mandatory requirement of literature or fine arts in metallurgical engineering.

Engineering Registration as a Professional Engineer

Engineering is a profession requiring state registration to become a “Professional Engineer.” The first step towards becoming registered is passing the Fundamentals of Engineering Exam. Students are strongly encouraged (but not required) to take and pass the Fundamentals of Engineering Exam before they graduate.

Approved Math Elective Courses*

MA 237 – Applied Matrix Theory
MA 257 – Linear Algebra
MA 300 – Introduction to Numerical Analysis
MA 343 – Applied Differential Equations II
MA 411 – Introduction to Numerical analysis
GES 255 – Engineering Statistics I
GES 400 – Engineering Statistics
GES 451 – Matrix and Vector Analysis
ME 411 – Finite Element Analysis and Heat Transfer

* Other courses in “engineering-related” mathematics (e.g., statistics, linear algebra, advanced calculus, etc.) can be taken provided that it has been approved by the Department by prior petition.

Approved Science Elective Courses**

BSC 114 – Principles of Biology
CH 223 – Chemical Equilibria and Analyses
CH 231 – Elementary Organic Chemistry I
PH 253 – Modern Physics
PH 331 – Electricity and Magnetism I
PH 333 – Optics
GEO 210 – Minerology
GY 339 – Natural Resources & Environmental Planning
CE 425 – Air Pollution (see prerequisites in catalog)
CHE 438 – Electronic Materials
CHE 412 – Polymer Materials Engineering
ME 441 – Introduction to Biomedical Engineering
MTE 476 – Physical Ceramics
MTE 487 – Corrosion Science & Engineering

** Other courses in “engineering-related” sciences can be taken provided that it has been approved by the Department by prior petition.

Approved MTE Elective Courses***

MTE 412 (CHE 412) – Polymer Materials Engineering
MTE 439 – Metallurgy of Welding
MTE 449 – Powder Metallurgy
MTE 450 – Plasma Processing of Thin Films
MTE 467 – Strengthening Mechanisms in Materials
MTE 476 – Physical Ceramics

*** Other “materials-related” engineering, math or science courses can be taken provided that it has been approved by the Department by prior petition.