Department of Materials Science and Engineering

Suggested Program of Study

Materials Science Engineering: 2022-2023

FIRST YEAR

Fall 12 hours

CHM 2045C Chemistry Fundamentals I (CHM 1025C or Placement Exam)	4 hrs
MAC 2311C Calc. w/ Analytic Geometry I (MAC 1140C & MAC 1114 or Placement Exam)	4 hrs
ENC 1101 English Composition I	3 hrs
EGS 1006C Intro to the Engineering Prof.	1 hr

Spring 16 hours

CHM 2046C Chemistry Fundamentals II (CHM 2045C)	3 hrs
CHM 2046L Chemistry Fund. II Lab	1 hrs
MAC 2312 Calc. w/ Analytic Geometry II (MAC 2311)	4 hrs
ENC 1102 English Composition II (ENC 1101)	3 hrs
PHY 2048 Gen Physics Using Calculus I (MAC 2311C)	3 hrs
PHY 2048 L Gen Physics Using Calculus I Lab (PHY 2048)	1 hr
EGN 1007C Engr Concepts and Methods (EGS 1006C)	1 hr

Summer 10 hours

MAC 2313 Calc. w/ Analytic Geometry III (MAC 2312)	4 hrs
SPC 1603C Fund. of Tech. Presentations	3 hrs
ECO 2013 Principles of Macroeconomics	3 hrs

SECOND YEAR

Fall 13 hours

CHM 2210 Organic Chemistry I (CHM 2046)	3 hrs
PHY 2049 Gen. Physics Using Calculus II (MAC 2312 & PHY 2048)	3 hrs
PHY 2049L Gen. Physics Using Calculus II Lab (PHY 2049)	1 hr
EGN 3365 Structures and Prop. of Materials (CHM 2045C & MAC 2312)	3 hrs
EGN 3211 Engr. Analysis and Computation (MAC 2312)	3 hrs

Spring 15 hours

MAP 2302 Ordinary Diff. Equations I (MAC 2313)	3 hrs
EMA 3012C Exp. Techniques in Materials I (EGN 3365 or EMA 3706)	3 hrs
EMA 3102 Thermodynamics of Materials (EGN 3365 or EMA 3706, MAC 2313, & PHY 2049)	3 hrs
EMA 3124 Design and Selection of Mats. (EGN 3365 or EMA 3706)	3 hrs
EGN 3373 Principles of Electrical Engr. (PHY 2049)	3 hrs

Summer 9 hours

STA 3032 Prob. and Statistics for Engrs. (MAC 2312)	3 hrs
Social Foundation	3 hrs
Cultural/Historical Foundation B1/B2 Grp	3 hrs

THIRD YEAR

Fall 12 hours

EMA 3000 Engineering Polymeric Mats. (EMA 3102 & CHM 2210)	3 hrs
EMA 4513 Structures of Materials (EGN 3365 or EMA 3706)	3 hrs
EMA 4223 Fund. of Mech. Behav. of Mats. (EGN 3365 or EMA 3706)	3 hrs
EMA 4307 Kinetics of Materials (EMA 3102)	3 hrs

Spring 12 hours

EMA 4115 Transport Phenomena in Mats. (EMA 4307)	3 hrs
EMA 4125 Phase Transformations and Microstructural Development in Materials (EGN 3365, EMA 3000, & EMA 4513)	3 hrs
EMA 4013C Exp. Techniques in Mats. II (EMA 3012C & EMA 4223)	3 hrs
Select 1:	
CHM 2211 Organic Chemistry II (CHM 2210)	3 hrs
PHY 3101 Gen Physics Using Calculus III (MAC 2313 & PHY 2049 or PHY 2045)	3 hrs
EGN 3310 Engineering Analysis- Statics (MAC 2311C & PHY 2048C)	3 hrs

FOURTH YEAR

Fall 15 hours

EMA 4915 Materials Senior Design I (EMA 4115, EMA 4013C, & EMA 4125)	3 hrs
EMA 4602C Materials Processing Lab (EMA 3012C & EMA 3124)	3 hrs
EMA 4413 Fund. of Electronic Materials (EGN 3365 & EGN 3373)	3 hrs
Technical Elective	3 hrs
Technical Elective	3 hrs

Spring 14 hours

EMA 4916 Materials Senior Design II (EMA 4915)	3 hrs
EMA 4009 Materials in Society (EMA 3365, EMA 3000, & EMA 4513)	2 hrs
Science Foundation E2 Group	3 hrs
Cultural Foundation B2 Group	3 hrs
Historical Foundation B1 Group	3 hrs