

Materials Science and Engineering – Calculus I

2023-2024 Catalog: Sample Four-Year Schedule

Year One	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
	MATH 1710	Calculus I <i>Pre-req: MATH 1650 or Test Placement</i>	4	F., Sp., Su.	MATH 1720	Calculus II <i>Pre-req: MATH 1710</i>	3	F., Sp., Su.
	CHEM 1410	General Chemistry I <i>Pre-req: MATH 1100 or higher</i>	3	F., Sp., Su.	PHYS 1710	Mechanics <i>Pre-req: MATH 1710</i>	3	F., Sp., Su.
	CHEM 1430	General Chemistry I Lab <i>Co/Pre-req: CHEM 1410</i>	1	F., Sp., Su.	PHYS 1730	Mechanics Lab <i>Co/Pre-req: PHYS 1710</i>	1	F., Sp., Su.
	MTSE 1100	Discover How and Why Materials Matter	3	F.	CHEM 1420	General Chemistry II <i>Pre-req: CHEM 1410, 1430</i>	3	F., Sp.
	Comm. Core	University Core – Communication	3	F., Sp., Su.	TECM 2700	Technical Writing <i>Pre-req: Communication Core</i>	3	F., Sp., Su.
	Total Hours		14		University Core	University Core – American History I	3	F., Sp., Su.
				Total Hours		16		

Year Two	MATH 2730	Multivariable Calculus <i>Pre-req: MATH 1720</i>	3	F., Sp., Su.	MATH 3410	Differential Equations <i>Pre-req: MATH 1720</i>	3	F., Sp., Su.
	PHYS 2220	Electricity & Magnetism <i>Pre-reqs: MATH 1720 & PHYS 1710/1730</i>	3	F., Sp., Su.	MTSE 3001	Fundamentals II <i>Co/Pre-req: MTSE 3000</i>	3	F., Sp.
	PHYS 2240	Electricity & Magnetism Lab <i>Co/Pre-req: PHYS 2220</i>	1	F., Sp., Su.	MTSE 3110	Quantum Materials <i>Pre-req: MTSE 3000, PHYS 2220</i>	3	Sp.
	MTSE 3000	Fundamentals I <i>Pre-req: CHEM 1410, 1430</i>	3	F., Sp.	University Core	University Core – State Government	3	F., Sp., Su.
	ENGR 2301	Statics <i>Pre-reqs: MATH 1710, PHYS 1710, 1730</i>	3	F., Sp., Su.	University Core	University Core – Creative Arts	3	F., Sp., Su.
	University Core	University Core – American History II	3	F., Sp., Su.	Total Hours		15	
	Total Hours		16					

Year Three	MTSE 3010	Bonding and Structure <i>Pre-req: MTSE 3000</i>	3	F.	MTSE 3050	Mechanical Properties <i>Pre-req: MTSE 3000</i>	3	Sp.
	MTSE 3020	Microstructure and Characterization <i>Pre-req: MTSE 3000</i>	3	F.	MTSE 3060	Phase Transformations <i>Pre-req: MTSE 3010, 3030, 3040</i>	3	Sp.
	MTSE 3030	Thermodynamics and Phase Diagrams <i>Pre-req: MTSE 3000</i>	3	F.	MTSE 3070	Elect., Optical, Magnetic Properties <i>Pre-req: MTSE 3000</i>	3	Sp.
	MTSE 3040	Transport Phenomena <i>Pre-req: MTSE 3000, MATH 3410</i>	3	F.	MTSE 3080	Materials Processing <i>Pre-req: MTSE 3040</i>	3	Sp.
	MTSE 3090	Laboratory I <i>Pre-req: MTSE 3000</i>	1	F.	MTSE 3100	Laboratory II <i>Pre-req: MTSE 3090</i>	1	Sp.
	University Core	University Core – Federal Government	3	F., Sp., Su.	University Core	University Core – Language, Philosophy and Culture	3	F., Sp., Su.
	Total Hours		16		Total Hours		16	

Year Four	MTSE 4010	Physical Metallurgy Principles <i>Pre-reqs: MTSE 3010, 3030, 3040</i>	3	F.	MTSE 4050	Polymer Science and Engineering <i>Pre-req: MTSE 3000</i>	3	Sp.
	MTSE 4030	Ceramic Science and Engineering <i>Pre-reqs: MTSE 3010, 3020, 3040</i>	3	F.	MTSE 4100	Senior Design II <i>Pre-req: MTSE 4090</i>	3	Sp.
	MTSE 4060	Selection and Performance <i>Pre-reqs: MTSE 3030, 3040, 3050</i>	3	F.	MTSE Elective	MTSE 4020 or MTSE 4040 or MTSE 4070 Must complete pre-reqs	3	Sp.
	MTSE 4090	Senior Design I <i>Pre-reqs: MTSE 3010, 3020, 3030, 3040, 3050, 3070, 3080</i>	3	F.	MTSE Elective	MTSE 4020 or MTSE 4040 or MTSE 4070 Must complete pre-reqs	3	Sp.
	University Core	University Core – Social and Behavioral Sciences	3	F., Sp., Su.	Total Hours		12	
	Total Hours		15					

Courses in **GREEN** are taken at UNT and require a particular prerequisite order.

Courses in **BLACK** can be fulfilled by AP, IB, CLEP, and/or Texas Community College Dual Credit or Transfer Credit and require a particular prerequisite order.

Courses in **BLUE** can be fulfilled by AP, IB, CLEP, and/or Texas Community College Dual Credit or Transfer Credit and can be completed in any term prior to graduation.

ENGL, TECM, MATH, CHEM, PHYS, ENGR, and MTSE courses require minimum grade of "C" for completion and/or prerequisite. This is an unofficial sample schedule.

This is an unofficial sample schedule. Requirements, prerequisites, corequisites, and term offerings may change. UNT students should check their degree audit at mydegreearbit.unt.edu each term. UNT students should meet with their advisor each term to discuss individual scheduling, program decisions, etc.

Advanced Placement (AP), International Baccalaureate (IB), Credit by Exam (CLEP), Texas Community College Dual Credit, Texas Community College Transfer Credit

COMMUNICATION

AP English Lang. And Comp. Score of 3
IB English A: Lang. and Lit. Score of 5
Community College: ENGL 1301

TECHNICAL WRITING

Community College ENGL 2311: TECM 2700

AMERICAN HISTORY I

AP U.S. History score of 3
CLEP History of United States I
Community College: HIST 1301

AMERICAN HISTORY II

AP U.S. History score of 3
CLEP History of United States II
Community College: HIST 1302

FEDERAL GOVT/POLI SCIENCE

AP U.S. Government score of 3
CLEP American Government
Community College: GOVT 2305

STATE GOVT/POLI SCIENCE

Community College: GOVT 2306

CREATIVE ARTS

AP Art History score of 3
IB Dance score of 4*
Community College: ARTS 1301
Community College: ARTS 1304
Community College: MUSI 1306
Community College: DRAM 1310

LANGUAGE, PHILOSOPHY, AND CULTURE

AP English Literature and Comp. score of 3
AP World History score of 3
IB History score of 4*
IB Philosophy score of 5
IB English Language A: Lit. Score of 5
Community College: ENGL 2332
Community College: ENGL 2333
Community College: ENGL 2341
Community College: HIST 2321
Community College: HIST 2322
Community College: PHIL 1301
Community College: PHIL 1304
Community College: PHIL 2303
Community College: PHIL 2306

SOCIAL AND BEHAVIORAL SCIENCES

AP Macroeconomics score of 3
AP Microeconomics score of 3
AP Psychology score of 3
IB Economics score of 4*
IB Geography score of 4*
IB Psychology score of 4*
CLEP Macroeconomics
CLEP Microeconomics
CLEP Human Growth and Development
CLEP Introductory Psychology
CLEP Introductory Sociology

SOCIAL AND BEHAVIORAL SCIENCES (Continued)

Community College: ANTH 2346
Community College: ANTH 2351
Community College: SPCH 1318
Community College: ECON 2301
Community College: ECON 2302
Community College: GEOG 1303
Community College: TECA 1354
Community College: COMM 1307
Community College: PSYC 2301
Community College: PSYC 2302
Community College: SOCI 1301

CHEMISTRY

AP Chemistry score of 4: CHEM 1410, 1430
AP Chemistry score of 5: CHEM 1410, 1430, and 1420, 1440
IB Chemistry: CHEM 1410, 1430, and 1420, 1440
CLEP General Chemistry: CHEM 1410, 1420
Community College CHEM 1111: CHEM 1430
Community College CHEM 1112: CHEM 1440
Community College CHEM 1311: CHEM 1410
Community College CHEM 1312: CHEM 1420
Community College CHEM 1411: CHEM 1410, 1430
Community College CHEM 1412: CHEM 1420, 1440

PHYSICS

AP Physics C (Mechanics) score of 4: PHYS 1710, 1730
PHYS Physics C (Electricity and Magnetism) score of 4: PHYS 2220, 2240
Community College PHYS 2125: PHYS 1730
Community College PHYS 2126: PHYS 2240
Community College PHYS 2325: PHYS 1710
Community College PHYS 2326: PHYS 2220
Community College PHYS 2425: PHYS 1710, 1730
Community College PHYS 2426: PHYS 2220, 2240

MATHEMATICS

AP Calculus AB score of 3: MATH 1710
AP Calculus BC score of 3: MATH 1710, 1720
AP Calculus AB sub score of BC Exam score 3: MATH 1710
IB Mathematics – Calculus: MATH 1710
CLEP College Algebra: MATH 1100
CLEP Pre-calculus: MATH 1650
CLEP Calculus: MATH 1710
Community College MATH 1314: MATH 1100
Community College MATH 1414: MATH 1100
Community College MATH 1442: MATH 1680
Community College MATH 2312: MATH 1650
Community College MATH 2412: MATH 1650
Community College MATH 2313: MATH 1710
Community College MATH 2314: MATH 1720
Community College MATH 2315: MATH 2730
Community College MATH 2320: Substitutes for MATH 3410
Community College MATH 2413: MATH 1710
Community College MATH 2414: MATH 1720
Community College MATH 2415: MATH 2730
Community College MATH 2420: Substitutes for MATH 3410

ENGINEERING

Community College ENGR 2301: ENGR 2301