

# Materials Science and Engineering – College Algebra

2023-2024 Catalog: Sample Five-Year Schedule

	Fall Semester	Course Title	Credit Hours	Term(s) Offered	Spring Semester	Course Title	Credit Hours	Term(s) Offered
Year One	MATH 1100	College Algebra <i>Pre-req: TSI Completion</i>	3	F., Sp., Su.	MATH 1650	Pre-Calculus <i>Pre-req: MATH 1100, 1600 or Test Placement</i>	5	F., Sp., Su.
	MTSE 1100	Discover How and Why Materials Matter	3	F.	CHEM 1410	General Chemistry I <i>Pre-req: MATH 1100 or higher</i>	3	F., Sp., Su.
	Comm. Core	University Core – Communication	3	F., Sp., Su.	CHEM 1430	General Chemistry I Lab <i>Co/Pre-req: CHEM 1410</i>	1	F., Sp., Su.
	University Core	University Core – American History I	3	F., Sp., Su.	TECM 2700	Technical Writing <i>Pre-req: Communication Core</i>	3	F., Sp., Su.
	University Core	University Core – Federal Government	3	F., Sp., Su.	Total Hours		12	
	Total Hours		15					

Year Two	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 1420	General Chemistry II <i>Pre-req: CHEM 1410, 1430</i>	3	F., Sp., Su.	PHYS 1710	Mechanics <i>Pre-req: MATH 1710</i>	3	F., Sp., Su.
	MTSE 3000	Fundamentals I <i>Pre-req: CHEM 1410, 1430</i>	3	F., Sp.	PHYS 1730	Mechanics Lab <i>Co/Pre-req: PHYS 1710</i>	1	F., Sp., Su.
	University Core	University Core – American History I	3	F., Sp., Su.	MTSE 3001	Fundamentals II <i>Co/Pre-req: MTSE 3000</i>	3	Sp.
	Total Hours		13		University Core	University Core – State Government	3	F., Sp., Su.
					Total Hours		13	

Year Three	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 &amp; PHYS 1710/1730</i>	3	F., Sp., Su.	MTSE 3110	Quantum Materials <i>Pre-req: MTSE 3000, PHYS 2220</i>	3	F., Sp.
	PHYS 2240	Electricity & Magnetism Lab <i>Co/Pre-req: PHYS 2220</i>	1	F., Sp., Su.	MTSE 3050	Mechanical Properties <i>Pre-req: MTSE 3000</i>	3	Sp.
	ENGR 2301	Statics <i>Pre-reqs: MATH 1710, PHYS 1710, 1730</i>	3	F., Sp., Su.	University Core	University Core – Language, Philosophy and Culture	3	F., Sp., Su.
	University Core	University Core – Creative Arts	3	F., Sp., Su.	Total Hours		12	
	Total Hours		13					

Year Four	MTSE 3010	Bonding and Structure <i>Pre-req: MTSE 3000</i>	3	F.	MTSE 3060	Phase Transformations <i>Pre-req: MTSE 3010, 3030, 3040</i>	3	Sp.
	MTSE 3020	Microstructure and Characterization <i>Pre-req: MTSE 3000</i>	3	F.	MTSE 3070	Elect., Optical, Magnetic Properties <i>Pre-req: MTSE 3000</i>	3	Sp.
	MTSE 3030	Thermodynamics and Phase Diagrams <i>Pre-req: MTSE 3000</i>	3	F.	MTSE 3080	Materials Processing <i>Pre-req: MTSE 3040</i>	3	Sp.
	MTSE 3040	Transport Phenomena <i>Pre-req: MTSE 3000, MATH 3410</i>	3	F.	MTSE 3100	Laboratory II <i>Pre-req: MTSE 3090</i>	1	Sp.
	MTSE 3090	Laboratory I <i>Pre-req: MTSE 3000</i>	1	F.	University Core	University Core – Social and Behavioral Sciences	3	F., Sp., Su.
	Total Hours		13		Total Hours		13	

Year Five	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.
	Total Hours		12		Total Hours		12	

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 mydegreeaudit.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

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## **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