

# TWU Chemistry – UNT Materials Science and Engineering

2024-2025 Catalog: Sample Five-Year Schedule

## YEAR ONE

Fall Semester	Course Title	Credit Hours	Spring Semester	Course Title	Credit Hours	Summer Semester	Course Title	Credit Hours
MATH 2014	Calculus I	4	MATH 2024	Calculus II	4	HIST 1013	History of the United States	3
CHEM 1001	Horizons of Chemistry and Biochemistry I	1	CHEM 1101	Horizons of Chemistry and Biochemistry II	1	POLS 2013	U.S. National Government	3
*CHEM 1213 & 1211	Principles of Chemistry I & Lab	4	*CHEM 1223 & 1221	Principles of Chemistry II and Lab	4	TWU Elective	Global Perspectives	3
ENGL 1013	Composition I	3	University Core	Creative Arts	3	Total Hours		9
UNIV 1231	Learning Frameworks	1	University Core	Multicultural Woman's Studies CAO	3			
University Core	Wellness/Mathematics CAO	2	Total Hours		15			
Total Hours		15						

## YEAR TWO

MATH 3104	Calculus III	4	MATH 3123	Differential Equations	3	HIST 1023	History of the United States	3
CHEM 2213 & 2211	Organic Chemistry I and Lab	4	CHEM 3223 & 3221	Organic Chemistry II and Lab	4	POLS 2023	Texas Government	3
PHYS 2153 & 2151	General Physics I and Lab	4	PHYS 2163 & 2161	General Physics II and Lab	4	Total Hours		6
MTSE 1100	Discover How and Why Materials Matter	3	CHEM 3333 & 3331	Quantitative Chemical Analysis and Lab	4			
Total Hours		15	Total Hours		15			

## YEAR THREE

CHEM 3413 & 3411	Physical Chemistry I and Lab	4	CHEM 3423 & 3421	Physical Chemistry II and Lab	4	University Core	Social and Behavioral Sciences	3
CHEM 3633 & 3632	Biochemistry I and Lab	4	CHEM 3643	Biochemistry II	3	University Core	Language, Philosophy and Culture	3
CHEM 4313 & 4311	Instrumental Analysis and Lab	4	CHEM 3713 & 3711	Environmental Chemistry I and Lab	4	Total Hours		6
MTSE 3000	Fundamentals I	3	MTSE 3001	Fundamentals II	3			
Total Hours		15	MTSE 3110	Quantum Materials	3			
			Total Hours		17			

**YEAR FOUR**

CHEM 4513 & 4511	Inorganic Chemistry and Lab	4		CHEM 4983	Undergraduate Research	3		ENGR 2301	Statics	3
MTSE 3010	Bonding and Structure	3		MTSE 3050	Mechanical Properties	3		TECM 2700	Technical Writing	3
MTSE 3020	Microstructure and Characterization	3		MTSE 3060	Phase Transformations	3		Total Hours		6
MTSE 3030	Thermodynamics and Phase Diagrams	3		MTSE 3070	Elect., Optical, Magnetic Properties	3				
MTSE 3040	Transport Phenomena	3		MTSE 3080	Materials Processing	3				
MTSE 3090	Laboratory I	1		MTSE 3100	Laboratory II	1				
Total Hours		17		Total Hours		16				

**YEAR FIVE**

CHEM 4983	Undergraduate Research	3		CHEM 4001	Research Presentations	1				
MTSE 4010	Physical Metallurgy Principles	3		MTSE 4050	Polymer Science and Engineering	3				
MTSE 4030	Ceramic Science and Engineering	3		MTSE 4100	Senior Design II	3				
MTSE 4060	Selection and Performance	3		MTSE Elective	MTSE 4020 or MTSE 4040 or MTSE 4070	3				
MTSE 4090	Senior Design I	3		MTSE Elective	MTSE 4020 or MTSE 4040 or MTSE 4070	3				
Total Hours		15		Total Hours		13				

\*Required in lieu of General Chemistry per TWU Chemistry degree plan.

Courses in **BLACK** are taken at TWU. Courses in **GREEN** are taken at UNT. Courses must be taken in a particular prerequisite order.

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. Requirements, prerequisites, corequisites, and term offerings may change.

UNT students should check their degree audit at [mydegreeaudit.unt.edu](http://mydegreeaudit.unt.edu) each term.

UNT students should meet with their advisor each term to discuss individual scheduling, program decisions, etc.