Technology Engineering

1. University Requirements: (23-24)

Writing, Rhetoric and American Cultures (WRA)	4
Integrative Studies in Humanities IAH 201-210 & IAH 211 or >	8
Integrative Studies in Social Sciences ISS 2XX & ISS 3XX	8
Bioscience (one of the following):	3-4
BS 161, ENT 205, IBIO 150, MMG 141	
MMG 201, PLB 105, PSL 250	

2. College Requirements: (26-28)

*CEM 141	General Chemistry	4
OR		
*CEM 151	General and Descriptive Chemistry	4
*EGR 100	Introduction to Engineering Design	2
*EGR 102	Introduction to Engineering Modeling	2
*MTH 116	College Algebra and Trigonometry	5
*MTH 132	Calculus I	3
*PHY 183	Physics for Scientists & Engineers I	4
OR		
*PHY 231	Introductory Physics I	3
PHY 184	Physics for Scientists and Engineers II	4
OR		
PHY 232	Introductory Physics II	3
CSE 231	Introduction to Programming I	4

*College Admission Requirement

3. Major Requirements: (70)

a. Complete all of the following courses: (26)

CEM 161	Chemistry Laboratory I	1
CSE 232	Introduction to Programming II	4
ECE 230	Digital Logic Fundamentals	3
ME 280	Graphic Communications	2
MGT 325	Management Skills and Processes	3
OR		
SCM 304	Survey of Supply Chain Management	3
MSE 250	Materials Science and Engineering	3
PHY 251	Introductory Physics I Lab	1
OR		
PHY 191	Physics Laboratory for Scientists I	1
PHY 252	Introductory Physics II Lab	1
STT 180	Introduction to Data Science	4
STT 201	Statistical Methods	4
	Math/Basic Science Elective from defined course pool.	3

b. Complete all of the following courses: (25)

TNG 210	Manufacturing Processes and Prototyping	2
TNG 220	Electrical Circuits	4
TNG 310	Advanced Graphics Communications	3
TNG 320	Sensors and Signal Processing	3
TNG 322	Electronics and Embedded Systems Lab	1
TNG 330	Quality and Continuous Improvement	3
TNG 335	Computer Security Fundamentals	3
TNG 430	Engineering Project Management	3
TNG 480	Technology Engineering Capstone (W)	3

c. Concentration – Choose one set of courses: (16)

Mechatronics

TNG 340	Engineering Statics & Mechanics of Materials	3
TNG 345	Mechanical Machine Dynamics	3
TNG 440	Robotics, Automation, and Controls	3
TNG 445	Troubleshooting Mechatronic Systems	4
TNG 447	Topics In Mechatronics	3

OR

Embedded Cybersecurity

TNG 350	Operating System Fundamentals	3
TNG 355	Networks and Network Security	3
TNG 450	Hardware Cybersecurity	3
TNG 455	Engineering Secure Hardware and Software	4
TNG 457	Topics in Embedded Cybersecurity	3

The requirements listed apply to students admitted to the Technology Engineering program, beginning Fall 2024. The Engineering Undergraduate Studies Office constantly reviews requirements and reserves the right to make changes as necessary. Consequently, each student is strongly encouraged to consult with their advisor to obtain assistance in planning an appropriate schedule of courses.

Other Electives (Variable)

Total Credits Required for Degree	**128**

Last revised July 2024

Technology Engineering with Mechatronics Concentration
Sample Program

Freshman Year

Fall	Credits	Spring	Credits	Fall	Credits	Spring	Credits
EGR 100	2	EGR 102	2	TNG 210	2	CSE 232	4
MTH 116	5	MTH 132	3	ME 280	2	STT 180	4
CEM 141 OR 151	4	PHY 231 OR PHY 183	3-4	CSE 231	4	TNG 220	4
CEM 161	1	General Elective	3	PHY 232	3	Bioscience	3-4
ISS 2XX	4	PHY 251 OR PHY 191	1	PHY 252	1		
		WRA 101	4	IAH 201-210	4		
Total	**16**	**Total**	**16-17**	**Total**	**16**	**Total**	**15-16**

Junior Year

Fall	Credits	Spring	Credits	Fall	Credits	Spring	Credits
TNG 310	3	TNG 335	3	TNG 330	3	TNG 480	3
STT 201	4	Math/Science Elect	3	TNG 430	3	TNG 445	4
ECE 230	3	TNG 322	1	TNG 447	3	MGT 325 OR SCM 304	3
TNG 320	3	TNG 345	3	TNG 440	3	General Elective	4
TNG 340	3	MSE 250	3	ISS 3XX	4	General Elective	3
		IAH 211 or >	4				
Total	**16**	**Total**	**17**	**Total**	**16**	**Total**	**17**

Technology Engineering with Embedded Cybersecurity Concentration
Sample Program

Freshman Year

Fall	Credits	Spring	Credits	Fall	Credits	Spring	Credits
EGR 100	2	EGR 102	2	TNG 210	2	CSE 232	4
MTH 116	5	MTH 132	3	ME 280	2	STT 180	4
CEM 141 OR 151	4	PHY 231 OR PHY 183	3-4	CSE 231	4	TNG 220	4
CEM 161	1	General Elective	3	PHY 232	3	Bioscience	3-4
ISS 2XX	4	PHY 251 OR PHY 191	1	PHY 252	1		
		WRA 101	4	IAH 201-210	4		
Total	**16**	**Total**	**16-17**	**Total**	**16**	**Total**	**15-16**

Junior Year

Fall	Credits	Spring	Credits	Fall	Credits	Spring	Credits
TNG 310	3	TNG 335	3	TNG 330	3	TNG 480	3
STT 201	4	Math/Science Elect	3	TNG 430	3	TNG 445	4
ECE 230	3	TNG 322	1	TNG 457	3	MGT 325 OR SCM 304	3
TNG 320	3	TNG 355	3	TNG 450	3	General Elective	4
TNG 350	3	MSE 250	3	ISS 3XX	4	General Elective	3
		IAH 211 or >	4				
Total	**16**	**Total**	**17**	**Total**	**16**	**Total**	**17**

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