

Materials & Biomedical Engineering Program Road Map 2022-23

This program layout applies to students registered in 2022-2023.

Where there are discrepancies in this document, the published [Academic Calendar](#) will always take precedence.

For a detailed breakdown of your course requirements, please refer to your Advisement Report in Mosaic.

MATERIALS & BIOMEDICAL - LEVEL II						
	TERM 1			TERM 2		
MATLS CORE	Engineering Mathematics III	MATH 2Z03	3	3	MATH 2ZZ3	Engineering Mathematics IV
	Statics and Mechanics of Materials	CIVENG 2P04	4	4	CHEMENG 2004	Fluid Mechanics
	Introduction to the Thermodynamics of Materials	MATLS 2B03	3	3	MATLS 2D03	Thermodynamics of Alloys & Phase Diagrams
	Introduction to Materials Engineering	MATLS 2A04	4	3	ELECTIVE	Complementary Studies
IBIOMED CORE	Inquiry II: Biochemistry	HTHSCI 2E03	3	3	IBEHS 2P03	Health Solutions Design Projects II: Introduction to Genetic Engineering
				3	CHEM 1AA3	Introductory Chemistry II
	<u>TOTAL TERM 1 UNITS</u>		17	19	<u>TOTAL TERM 2 UNITS</u>	
	<u>TOTAL UNITS:</u>		36			

MATERIALS & BIOMEDICAL - LEVEL III						
	TERM 1			TERM 2		
MATLS CORE	Numerical Methods and Computing for Chemical Engineers	CHEMENG 2E04	4	3	MATLS 3B03	Manufacturing Engineering of Multifunctional and Biomedical Materials
	Mass Transfer	MATLS 3E04	4	3	MATLS 3M03	Mechanical Behaviour of Materials
	Complementary Studies	ELECTIVE	3	3	MATLS 2Q03	Electronic Properties of Materials
IBIOMED CORE	Statistics & Epidemiology 1	HTHSCI 2G03	3	3	HTHSCI 3G03	Critical Appraisal of the Medical Literature
	Biomedical Signals and Systems	IBEHS 3A03	3	4	IBEHS 3P04	Health Solutions Design Projects III: Analysis and Decision Making
	Human Physiology & Anatomy I	HTHSCI 2F03	3	3	HTHSCI 2FF3	Human Physiology & Anatomy II
	<u>TOTAL TERM 1 UNITS</u>		20	19	<u>TOTAL TERM 2 UNITS</u>	
	<u>TOTAL UNITS:</u>		39			

MATERIALS & BIOMEDICAL - LEVEL IV

	TERM 1			TERM 2		
MATLS CORE	Heat Transfer	CHEMENG 3A04	4	3	MATLS 3F03	High-Temperature Materials Production
				4	MATLS 3T04	Phase Transformations
				4	ELECTIVE	Approved Level III or IV Technical Elective
IBIOMED CORE	Biomechanics	IBEHS 4B03	3	3	IBEHS 4A03	Biomedical Control Systems
	Biomedical Instrumentation and Measurement	IBEHS 4F04	4	3	IBEHS 4C03	Statistical Methods in Biomedical Engineering
	Health Solutions Design Projects IV: Economics and Project Management	IBEHS 4P04	4	3	IBEHS 4D03	Introduction to Medical Imaging
	Introductory Organic Chemistry OR Organic Chemistry I	CHEM 2E03 OR CHEM 20A3	3			
	<u>TOTAL TERM 1 UNITS</u>		18	20	<u>TOTAL TERM 2 UNITS</u>	
	<u>TOTAL UNITS:</u>		38			

MATERIALS & BIOMEDICAL - LEVEL V

	TERM 1			TERM 2		
MATLS CORE	Materials Selection in Design & Manufacturing	MATLS 4MS4	4	3	ENGINEER 4A03	Ethics, Equity and Law in Engineering
	Materials Electives from MATLS 4LA2, 4LB2, 4LF2, 4LS2	ELECTIVE	2	2	ELECTIVE	Materials Electives from MATLS 4LA2, 4LB2, 4LF2, 4LS2
	Approved Level III or IV Technical Elective from List A or B	ELECTIVE	4	4	ELECTIVE	Approved Level III or IV Technical Elective from List A or B
				4	ELECTIVE	Approved Level III or IV Technical Elective from List A or B
IBIOMED CORE	Biomedical Capstone Design Project	MATLSBME 5P06A	3	3	MATLSBME 5P06B	Biomedical Capstone Design Project
	Modelling of Biological Systems	IBEHS 4QZ3	3	4	ELECTIVE	IBEHS Technical Elective
	IBEHS Technical Elective	ELECTIVE	4			
	<u>TOTAL TERM 1 UNITS</u>		20	20	<u>TOTAL TERM 2 UNITS</u>	
	<u>TOTAL UNITS:</u>		40			