

MATERIALS SCIENCE & ENGINEERING - Single Honours

Single Honours Degree Requirements	MCs	Remarks	Classification
(A) University Level Requirements			
General education modules:			
GER1000 Quantitative Reasoning	4	Only 1 set needs to be completed for both BEng and BBA degrees. May be replaced by selected USP, RVRC or UTCP modules.	CA
GEQ1000 Asking Questions	4		CA
GET	4		CA
GEH	4		CA
GES	4		CA
Sub-total for University Level Requirements	20		
(B) Engineering Programme Requirements			
Faculty requirements:			
EG2401A Engineering Professionalism	2		C1
ES2351 Critical Thinking and Writing	4	Can be replaced by UWC2101% (for USP students), ES1601 (for RVRC students), or UTW2001% (for UTCP students).	CA
Foundation requirements:			
MLE1001A Materials Science & Engineering Principles & Practice I	4		C1
MLE2001 Materials Science & Engineering Principles & Practice II	4		C1
MA1512 Differential Equations for Engineering	2		C1
MA1513 Linear Algebra with Differential Equations	2		C1
CS1010E Programming Methodology	4		C1
EE2211 Introduction to Machine Learning	4		C1
EG1311 Design and Make	4		C1
IE2141 Systems Thinking and Dynamics	4		C1
MLE1010 Materials Engineering Principles & Practices	4		C1
MSE core modules:			
CM1501 Organic Chemistry for Engineers	4		C1
PC1432 Physics IIE	4		C1
MLE2101 Introduction to Structure of Materials	4		C1
MLE2102 Thermodynamics and Phase Diagrams	4		C1
MLE2103 Phase Transformation and Kinetics	4		C1
MLE2104 Mechanical Properties of Materials	4		C1
MLE2105 Electronic Properties of Materials	4		C1
MLE3101 Materials Characterization Laboratory	4		C1
MLE3111 Materials Properties & Processing Laboratory	4		C1
MSE project and internship modules:			
MLE4101 B.Eng. Dissertation (12 MCs) or MLE4101A B.Eng. Dissertation (6 MCs)	14 or 16	Students should take one of the following combinations: ● MLE4101 (12 MCs) + MLE4102 (4 MCs) ● MLE4101A (6 MCs) + MLE4102A (8 MCs)	C1
MLE4102 Design Project (4 MCs) or MLE4102A Design Project (8 MCs)			C1
EG3611A Industrial Attachment	-	Exempted for DDP students	-
MSE pathway requirements and electives:			
MSE pathway requirement 1	4		C1
MSE pathway requirement 2	4		C1
Free electives	4		C1
Sub-total for Engineering Programme Requirements	100 or 102		
(C) FASS Faculty Requirements			
Level 1000 exposure module - Asian Studies	4	Choose one from the following: CH1101E, CL1101E, JS1101E, MS1102E, SE1101E, SN1101E	C2
Level 1000 exposure module - Social Sciences	4	EC1101E Introduction to Economic Analysis	C2
Level 1000 exposure module - Humanities	4	Choose one from the following: EL1101E, EN1101E, TS1101E, HY1101E, GET1029	C2
FAS1102 Public Writing and Communication or FAS1103 Effective Workplace Communication + CFG1002 Career Catalyst	4		C2
Sub-total for FASS Faculty Requirements	16		
(D) Economics Major Requirements			
Essential modules:			
EC2101 Microeconomic Analysis I	4		C2
EC2102 Macroeconomic Analysis I	4		C2
EC2104 Quantitative Methods for Economic Analysis	4		C2
EC3101 Microeconomic Analysis II	4		C2
EC3102 Macroeconomic Analysis II	4		C2
EC3303 Econometrics I	4		C2
Elective modules:			
EC elective 1 (Level 2000/3000)	4		C2
EC elective 2 (Level 3000)	4		C2
EC elective 2 (Level 3000)	4		C2
Sub-total for Economics Major Requirements	36		
(E) Common Modules			
BEng module	4	Select from list of Common Modules	CA
EC module	4		CA
Sub-total for Common Modules	8		
TOTAL (minimum)	180 or 182		