

AU Requirement for Mechanical Engineering with Second Major in Society Urban Systems (MESU) **Mainstream**
 Students admitted from AY2020/2021

Year of Study	Number of Academic Units (AUs)								
	Major Requirements		General Education Requirement (GER)					Total	
			GER Core	GER Prescribed Electives					UE
	Core	Major PE		BM	LA	STS	Any Category (BM, LA, STS)		
1	25	-	8	-	-	-	-	12	45
2	24	-	4	-	-	-	-	12	40
3	26	-	-	-	-	-	-	3	29
4	15	12	2	-	-	-	-	3	32
Total	90	12	14	0				30	146

Course Code and Title	Type	AU	Pre-requisite/ Remarks
YEAR 1 SEMESTER 1			
MH1810 Mathematics I	C	3	
PH1011 Physics	C	3	PH1011: 'A' level Physics
OR PH1012 Physics A		4	
FE1073 Introduction to Engineering and Practices	C	1	
MA2003 Introduction to Thermo-fluids	C	3	
HE9091 Principles of Economics	UE	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	3	
HW0188 Effective Communication	GC	2	HW0001 (co-requisite)
GC0001 Sustainability: Seeing Through The Haze	GC	1	
ET0001 Enterprise & Innovation	GC	1	
HY0001 Ethics and Moral Reasoning	GC	1	
Total		21	
YEAR 1 SEMESTER 2			
MH1811 Mathematics II	C	3	
MA1001 Dynamics	C	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1008 Introduction to Computational Thinking	C	3	
MA2001 Mechanics of Materials	C	3	
Engineering Fundamentals 2	C	3	
EG0001 Engineers and Society	GC	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	3	
Total		24	
YEAR 2 SEMESTER 1			
MA2002 Theory of Mechanism	C	3	MA1001
MA2004 Manufacturing Process	C	3	
MA2006 Engineering Mathematics	C	3	(MH1810 & MH1811) /MH2812/CY1203
MA2009 Introduction to Electrical Circuits and Electronics	C	3	
US2001 Urban Planning & Design	UE	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	3	
Total		21	

[Please refer here for specialised elective courses.](#)

YEAR 2 SEMESTER 2			
MA2005 Engineering Graphics	C	3	Semester 1 for AE students
MA2007 Thermodynamics	C	3	MA2003
MA2071 Laboratory Experiments (ME)	C	1	
MA2079 Engineering Innovation and Design	C	2	Semester 2 with 1 week in Special Term
MA3006 Fluid Mechanics	C	3	MA2003
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	3	
MA0218 Introduction to Data Science and Artificial Intelligence	GC	3	
ML0003 Kickstart Your Career Success	GC	1	
Total		19	
YEAR 3 SEMESTER 1			
MA3001 Machine Element Design	C	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	3	MA2001
MA3003 Heat Transfer	C	3	MA2007
MA3004 Mathematical Methods in Engineering	C	3	(MH1810 & MH1811)/MH2812/CY1203
MA3005 Control Theory	C	3	Having read MA2006
MA3071 Engineering Experiments (ME)	C	1	
US3001 Integrated Urban Management	UE	3	
Total		19	
YEAR 3 SEMESTER 2			
MA3080 Professional Internship	C	10	Students may do MA3075 Professional Attachment in Year 2 Special Semester (5 AU) and UE courses in any semester (5 AU) instead of MA3080.
Total		10	
YEAR 4 SEMESTER 1			
MA4079 Final Year Project	C	4	Year 4 standing, 2 semesters
MA4001 Engineering Design	C	4	Having read MA3001
HW0288 Engineering Communication	GC	2	HW0188
MA48XX Major-PE 1	PE	3	
US4001 Leaders in Urban Systems and Policy	UE	3	
Total		16	
YEAR 4 SEMESTER 2			
MA4079 Final Year Project	C	4	Year 4 standing, 2 semesters
MA4002 Fluid Dynamics	C	3	MA3006
MA48XX Major-PE 2	PE	3	
MA48XX Major-PE 3	PE	3	
MA48XX Major-PE 4	PE	3	
Total		16	
GRAND TOTAL (Year 1 to 4)		146	

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AU Requirement for Mechanical Engineering with Second Major in Society Urban Systems (MESU) **Design Stream**
Students admitted from AY2020/2021

Year of Study	Number of Academic Units (AUs)								
	Major Requirements		General Education Requirement (GER)					Total	
			GER Core	GER Prescribed Electives					UE
	Core	Major PE		BM	LA	STS	Any Category (BM, LA, STS)		
1	25	-	8	-	-	-	-	12	45
2	27	-	4	-	-	-	-	12	43
3	26	-	-	-	-	-	-	3	29
4	12	12	2	-	-	-	-	3	29
Total	90	12	14	0				30	146

Course Code and Title	Type	AU	Pre-requisite/ Remarks
YEAR 1 SEMESTER 1			
MH1810 Mathematics I	C	3	
PH1011 Physics	C	3	PH1011: 'A' level Physics
OR PH1012 Physics A		4	
FE1073 Introduction to Engineering and Practices	C	1	
MA2003 Introduction to Thermo-fluids	C	3	
HE9091 Principles of Economics	UE	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	3	
HW0188 Effective Communication	GC	2	HW0001 (co-requisite)
GC0001 Sustainability: Seeing Through The Haze	GC	1	
ET0001 Enterprise & Innovation	GC	1	
HY0001 Ethics and Moral Reasoning	GC	1	
Total		21	
YEAR 1 SEMESTER 2			
MH1811 Mathematics II	C	3	
MA1001 Dynamics	C	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1008 Introduction to Computational Thinking	C	3	
MA2001 Mechanics of Materials	C	3	
Engineering Fundamentals 2	C	3	
EG0001 Engineers and Society	GC	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	3	
Total		24	
YEAR 2 SEMESTER 1			
MA2002 Theory of Mechanism	C	3	MA1001
MA2004 Manufacturing Process	C	3	
MA2009 Introduction to Electrical Circuits and Electronics	C	3	
MA2014 Product Presentation	C	3	
US2001 Urban Planning & Design	UE	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	3	
Total		21	

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YEAR 2 SEMESTER 2			
MA2005 Engineering Graphics	C	3	Semester 1 for AE students
MA2006 Engineering Mathematics	C	3	(MH1810&MH1811)/ MH2812/CY1203
MA2013 Creative Thinking and Design	C	3	
MA2071 Laboratory Experiments (ME)	C	1	
MA2079 Engineering Innovation and Design	C	2	Semester 2 with 1 week in Special Term
MA3006 Fluid Mechanics	C	3	MA2003
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	3	
MA0218 Introduction to Data Science and Artificial Intelligence	GC	3	
ML0003 Kickstart Your Career Success	GC	1	
Total		22	
YEAR 3 SEMESTER 1			
MA3001 Machine Element Design	C	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	3	MA2001
MA3004 Mathematical Methods in Engineering	C	3	(MH1810 & MH1811)/ MH2812/CY1203
MA3005 Control Theory	C	3	Having read MA2006
MA3010 Thermodynamics & Heat Transfer	C	2	MA2003
MA3071 Engineering Experiments (ME)	C	1	
US3001 Integrated Urban Management	UE	3	
Total		19	
YEAR 3 SEMESTER 2			
MA3080 Professional Internship	C	10	Students may do MA3075 Professional Attachment in Year 2 Special Semester (5 AU) and UE courses in any semester (5 AU) instead of MA3080.
Total		10	
YEAR 4 SEMESTER 1			
MA4079 Final Year Project	C	4	Year 4 standing, 2 semesters
MA4011 Engineering Product Design	C	4	Having read MA3001
HW0288 Engineering Communication	GC	2	HW0188
MA48XX Major-PE 1	PE	3	
US4001 Leaders in Urban Systems and Policy	UE	3	
Total		16	
YEAR 4 SEMESTER 2			
MA4079 Final Year Project	C	4	Year 4 standing, 2 semesters
MA48XX Major-PE 2	PE	3	
MA48XX Major-PE 3	PE	3	
MA48XX Major-PE 4	PE	3	
Total		13	
GRAND TOTAL (Year 1 to 4)		146	

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FE1073 Introduction to Engineering and Practices	C	1	
MA2003 Introduction to Thermo-fluids	C	3	
HE9091 Principles of Economics	UE	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	3	
HW0188 Effective Communication	GC	2	HW0001 (co-requisite)
GC0001 Sustainability: Seeing Through The Haze	GC	1	
ET0001 Enterprise & Innovation	GC	1	
HY0001 Ethics and Moral Reasoning	GC	1	
Total		21	
YEAR 1 SEMESTER 2			
MH1811 Mathematics II	C	3	
MA1001 Dynamics	C	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1008 Introduction to Computational Thinking	C	3	
MA2001 Mechanics of Materials	C	3	
Engineering Fundamentals 2	C	3	
EG0001 Engineers and Society	GC	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	3	
Total		24	
YEAR 2 SEMESTER 1			
MA2002 Theory of Mechanism	C	3	MA1001
MA2004 Manufacturing Process	C	3	
MA2009 Introduction to Electrical Circuits and Electronics	C	3	
MA2012 Introduction to Mechatronics Systems Design	C	3	
US2001 Urban Planning & Design	UE	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	3	
Total		21	

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YEAR 2 SEMESTER 2			
MA2005 Engineering Graphics	C	3	Semester 1 for AE students
MA2006 Engineering Mathematics	C	3	(MH1810&MH1811)/ MH2812/CY1203
MA2011 Mechatronics Systems Interfacing	C	3	
MA2071 Laboratory Experiments (ME)	C	1	
MA2079 Engineering Innovation and Design	C	2	Semester 2 with 1 week in Special Term
MA3006 Fluid Mechanics	C	3	MA2003
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	3	
MA0218 Introduction to Data Science and Artificial Intelligence	GC	3	
ML0003 Kickstart Your Career Success	GC	1	
Total		22	
YEAR 3 SEMESTER 1			
MA3001 Machine Element Design	C	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	3	MA2001
MA3004 Mathematical Methods in Engineering	C	3	(MH1810 & MH1811)/ MH2812/CY1203
MA3005 Control Theory	C	3	Having read MA2006
MA3010 Thermodynamics & Heat Transfer	C	2	MA2003
MA3071 Engineering Experiments (ME)	C	1	
US3001 Integrated Urban Management	UE	3	
Total		19	
YEAR 3 SEMESTER 2			
MA3080 Professional Internship	C	10	Students may do MA3075 Professional Attachment in Year 2 Special Semester (5 AU) and UE courses in any semester (5 AU) instead of MA3080.
Total		10	
YEAR 4 SEMESTER 1			
MA4079 Final Year Project	C	4	Year 4 standing, 2 semesters
HW0288 Engineering Communication	GC	2	HW0188
MA48XX Major-PE 1	PE	3	
MA48XX Major-PE 2	PE	3	
US4001 Leaders in Urban Systems and Policy	UE	3	
Total		15	
YEAR 4 SEMESTER 2			
MA4079 Final Year Project	C	4	Year 4 standing, 2 semesters
MA4012 Mechatronics Engineering Design	C	4	Having read MA3001
MA48XX Major-PE 3	PE	3	
MA48XX Major-PE 4	PE	3	
Total		14	
GRAND TOTAL (Year 1 to 4)		146	

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