AU Required for Graduation

SECOND MAJOR PROGRAMME

Degree in Bachelor of Engineering
(MECHANICAL ENGINEERING) Programme (FULL-Time)

SECOND MAJOR in Society & Urban Systems

For students admitted to FULL-TIME B.ENG (ME) with
Second Major in Society & Urban Systems in AY2018/2019 - YEAR 1
(Mainstream) (Professional Internship)

Year of Study	Number of Academic Units (AUs)								
	Core	Major PE	General Education Requirement (GER)						Total
			Core	Prescribed Electives (PE)				UE	
				LA	STS	BM	ANY		
1	25	-	3	-	-	-	-	12	40
2	24	-	8	-	-	-	-	12	44
3	26	-	3	-	-	-	-	3	32
4	15	12	-	-	-	-	-	9	36
Total	90	12	14	0				36	152

For students admitted to FULL-TIME B.ENG (ME) with
Second Major in Society & Urban Systems in AY2018/2019 - YEAR 1
(Mainstream) (Optional PA)

Year of Study	Number of Academic Units (AUs)								
	Core	Major PE	General Education Requirement (GER)						Total
			Core	Prescribed Electives (PE)				UE	
				LA	STS	BM	ANY		
1	22	-	3	-	-	-	-	12	37
2	32	-	5	-	-	-	-	12	49
3	16	3	6	-	-	-	-	11	36
4	15	9	-	-	-	-	-	6	30
Total	85	12	14	0				41	152

Please refer here for specialised elective courses.

For students admitted to FULL-TIME B.ENG (ME) with Second Major in Society & Urban Systems in AY2018/2019 - YEAR 1 (Design Stream) (Professional Internship)

Year of Study	Number of Academic Units (AUs)								
	Core	Major PE	General Education Requirement (GER)					UE	Total
			Core	Prescribed Electives (PE)					
				LA	STS	BM	ANY		
1	25	-	3	-	-	-	-	12	40
2	27	-	5	-	-	-	-	12	44
3	23	-	6	-	-	-	-	3	32
4	15	12	-	-	-	-	-	9	36
Total	90	12	14	0				36	152

For students admitted to FULL-TIME B.ENG (ME) with Second Major in Society & Urban Systems in AY2018/2019 - YEAR 1 (Design Stream) (Optional PA)

Year of Study	Number of Academic Units (AUs)								
	Core	Major PE	General Education Requirement (GER)					UE	Total
			Core	Prescribed Electives (PE)					
				LA	STS	BM	ANY		
1	22	-	3	-	-	-	-	12	37
2	32	-	5	-	-	-	-	12	49
3	19	3	6	-	-	-	-	8	36
4	12	9	-	-	-	-	-	9	30
Total	85	12	14	0				41	152

Please refer here for specialised elective courses.

For students admitted to FULL-TIME B.ENG (ME) with Second Major in Society & Urban Systems in AY2018/2019 - YEAR 1 (Robotics and Mechatronics Stream) (Professional Internship)

Year of Study	Number of Academic Units (AUs)								
	Core	Major PE	General Education Requirement (GER)						Total
			Core	Prescribed Electives (PE)				UE	
				LA	STS	BM	ANY		
1	25	-	3	-	-	-	-	12	40
2	27	-	5	-	-	-	-	12	44
3	23	-	6	-	-	-	-	3	32
4	15	12	-	-	-	-	-	9	36
Total	90	12	14	0				36	152

For students admitted to FULL-TIME B.ENG (ME) with Second Major in Society & Urban Systems in AY2018/2019 - YEAR 1 (Robotics and Mechatronics Stream) (Optional PA)

Year of Study	Number of Academic Units (AUs)								
	Core	Major PE	General Education Requirement (GER)						Total
			Core	Prescribed Electives (PE)				UE	
				LA	STS	BM	ANY		
1	22	-	3	-	-	-	-	12	37
2	32	-	5	-	-	-	-	12	49
3	19	3	6	-	-	-	-	8	36
4	12	9	-	-	-	-	-	9	30
Total	85	12	14	0				41	152

Please refer here for specialised elective courses.

Curriculum Structure (4-Year Programme)

Degree in Bachelor of Engineering (MECHANICAL ENGINEERING) Programme with SECOND MAJOR IN SOCIETY & URBAN SYSTEMS (FULL-Time) (Professional Internship)

For students admitted to FULL-TIME B.ENG in AY2018/2019 (Mainstream)

Course Code and Title	Type	No of Hours Per Week				AU	Pre-requisite/ Remarks
		Lec	Tut	Lab	Total		
YEAR 1 SEMESTER 1							
MH1810 Mathematics I	C	2	1	-	3	3	
MA1008 Introduction to Computational Thinking	C	TBA	TBA	TBA	TBA	3	
PH1011 Physics	C	2	1	-	3	3	PH1011: 'A' level Physics
OR PH1012 Physics A		3	1	-	4	4	
FE1073 Introduction to Engineering and Practices	C	-	-	-	1	1	
HE9091 Principles of Economics	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	2	1	-	3	3	
HW0188 Engineering Communication I	GC	-	2	-	2	2	HW0001 (co-requisite)
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GC	-	1	-	1	1	Online, Sem 1 only
Total						**19**	
YEAR 1 SEMESTER 2							
MH1811 Mathematics II	C	3	-	-	3	3	
MA1001 Dynamics	C	2	1	-	3	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1002 Fundamental Engineering Materials	C	2	1	-	3	3	
MA2001 Mechanics of Materials	C	2	1	-	3	3	
MA2003 Introduction to Thermo-fluids	C	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	2	1	-	3	3	
Total						**21**	

Please refer here for specialised elective courses.

YEAR 2 SEMESTER 1							
MA2002 Theory of Mechanism	C	2	1	-	3	3	MA1001
MA2004 Manufacturing Process	C	2	1	-	3	3	
MA2006 Engineering Mathematics	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA2009 Introduction to Electrical Circuits and Electronics	C	2	1	-	3	3	
US2001 Urban Planning & Design	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	2	1	-	3	3	
HY0001 Ethics and Moral Reasoning	GC	-	1	-	1	1	Online, Sem 1 Only
ML0003 Career Course	GC	TBA	TBA	TBA	TBA	1	Online
Total						**23**	
YEAR 2 SEMESTER 2							
MA0101 Engineers and Society	GC	2	1	-	3	3	
MA2005 Engineering Graphics	C	2	-	3	5	3	Semester 1 for AE students
MA2007 Thermodynamics	C	2	1	-	3	3	MA2003
MA2071 Laboratory Experiments (ME)	C	-	-	3	3	1	
MA2079 Engineering Innovation and Design	C	2	-	-	2	2	Semester 2 with 1 week in Special Term
MA3006 Fluid Mechanics	C	2	1	-	3	3	MA2003
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	2	1	-	3	3	
Data Science and Artificial Intelligence	GC	TBA	TBA	TBA	TBA	3	
Total						**21**	
YEAR 3 SEMESTER 1							
MA3001 Machine Element Design	C	2	-	3	5	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	2	1	-	3	3	MA2001
MA3003 Heat Transfer	C	2	1	-	3	3	MA2007
MA3004 Mathematical Methods in Engineering	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA3005 Control Theory	C	2	1	-	3	3	Having read MA2006
MA3071 Engineering Experiments (ME)	C	-	-	3	3	1	
HW0288 Engineering Communication II	GC	-	2	-	2	2	HW0188 Engineering Communication I
US3001 Integrated Urban Management	UE	2	1	-	3	3	
ET0001 Entrepreneurship and Innovation	GC	-	1	-	1	1	Online, Sem 1 only
Total						**22**	
YEAR 3 SEMESTER 2							
MA3080 Professional Internship	C	-	-	-	-	10	
Total						**10**	

Please refer here for specialised elective courses.

YEAR 4 SEMESTER 1							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA4001 Engineering Design	C	3	-	3	6	4	Having read MA3001
MA4002 Fluid Dynamics	C	3	-	-	3	3	MA3006
MA48XX Major-PE 1	PE	3	-	-	3	3	
MA48XX Major-PE 2	PE	3	-	-	3	3	
US4001 Leaders in Urban Systems and Policy	UE	2	1	-	3	3	
Total						**20**	
YEAR 4 SEMESTER 2							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA48XX Major-PE 3	PE	3	-	-	3	3	
MA48XX Major-PE 4	PE	3	-	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #3	UE	2	1	-	3	3	
Total						**16**	
GRAND TOTAL (Year 1 to 4)						**152**	

Please refer here for specialised elective courses.

Curriculum Structure (4-Year Programme)

Degree in Bachelor of Engineering (MECHANICAL ENGINEERING) Programme with SECOND MAJOR IN SOCIETY & URBAN SYSTEMS (FULL-Time) (Optional PA)

For students admitted to FULL-TIME B.ENG in AY2018/2019 (Mainstream)

Course Code and Title	Type	No of Hours Per Week				AU	Pre-requisite/ Remarks
		Lec	Tut	Lab	Total		
YEAR 1 SEMESTER 1							
MH1810 Mathematics I	C	2	1	-	3	3	
MA1008 Introduction to Computational Thinking	C	TBA	TBA	TBA	TBA	3	
PH1011 Physics	C	2	1	-	3	3	PH1011: 'A' level Physics
OR PH1012 Physics A		3	1	-	4	4	
FE1073 Introduction to Engineering and Practices	C	-	-	-	1	1	
HE9091 Principles of Economics	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	2	1	-	3	3	
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GC	-	1	-	1	1	Online, Sem 1 only
Total						**17**	
YEAR 1 SEMESTER 2							
MH1811 Mathematics II	C	3	-	-	3	3	
MA1001 Dynamics	C	2	1	-	3	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1002 Fundamental Engineering Materials	C	2	1	-	3	3	
MA2003 Introduction to Thermo-fluids	C	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	2	1	-	3	3	
HW0188 Engineering Communication I	GC	-	2	-	2	2	HW0001 (co-requisite)
ML0001 Absolute Basics in Career	GC	-	1	-	1	1	Online, Sem 2 only
ML0003 Career Course	GC	TBA	TBA	TBA	TBA	1	Online
Total						**22**	
YEAR 2 SEMESTER 1							
MA2001 Mechanics of Materials	C	2	1	-	3	3	
MA2002 Theory of Mechanism	C	2	1	-	3	3	MA1001
MA2004 Manufacturing Process	C	2	1	-	3	3	
US2001 Urban Planning & Design	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	2	1	-	3	3	
HY0001 Ethics and Moral Reasoning	GC	-	1	-	1	1	Online, Sem 1 Only
Total						**19**	

Please refer here for specialised elective courses.

YEAR 2 SEMESTER 2							
MA2005 Engineering Graphics	C	2	-	3	5	3	Semester 1 for AE students
MA2006 Engineering Mathematics	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA2007 Thermodynamics	C	2	1	-	3	3	MA2003
MA2009 Introduction to Electrical Circuits and Electronics	C	2	1	-	3	3	
MA2071 Laboratory Experiments (ME)	C	-	-	3	3	1	
MA2079 Engineering Innovation and Design	C	2	-	-	2	2	Semester 2 with 1 week in Special Term
MA3006 Fluid Mechanics	C	2	1	-	3	3	MA2003
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	2	1	-	3	3	
Data Science and Artificial Intelligence	GC	TBA	TBA	TBA	TBA	3	
Total						**24**	
YEAR 2 SPECIAL SEMESTER							
MA3075 Professional Attachment	C	-	-	-	-	5	
Total						**5**	
YEAR 3 SEMESTER 1							
MA3001 Machine Element Design	C	2	-	3	5	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	2	1	-	3	3	MA2001
MA3003 Heat Transfer	C	2	1	-	3	3	MA2007
MA3004 Mathematical Methods in Engineering	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
US3001 Integrated Urban Management	UE	2	1	-	3	3	
ET0001 Entrepreneurship and Innovation	GC	-	1	-	1	1	Online, Sem 1 only
Unrestricted Elective (UE) 1	UE	3	-	-	3	3	
Total						**19**	
YEAR 3 SEMESTER 2							
MA0101 Engineers and Society	GC	2	1	-	3	3	
MA3005 Control Theory	C	2	1	-	3	3	Having read MA2006
MA3071 Engineering Experiments (ME)	C	-	-	3	3	1	
MA48XX Major-PE 1	PE	3	-	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #2	UE	2	1	-	3	3	
HW0288 Engineering Communication II	GC	-	2	-	2	2	HW0188 Engineering Communication I
Unrestricted Elective (UE) 2	UE	2	-	-	2	2	
Total						**17**	

Please refer here for specialised elective courses.

YEAR 4 SEMESTER 1							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA4001 Engineering Design	C	3	-	3	6	4	Having read MA3001
MA4002 Fluid Dynamics	C	3	-	-	3	3	MA3006
MA48XX Major-PE 2	PE	3	-	-	3	3	
US4001 Leaders in Urban Systems and Policy	UE	2	1	-	3	3	
Total						**17**	
YEAR 4 SEMESTER 2							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA48XX Major-PE 3	PE	3	-	-	3	3	
MA48XX Major-PE 4	PE	3	-	-	3	3	
Society & Urban System Specialization Track: Society and Culture #3	UE	2	1	-	3	3	
Total						**13**	
GRAND TOTAL (Year 1 to 4)						**152**	

Please refer here for specialised elective courses.

Curriculum Structure (4-Year Programme)

Degree in Bachelor of Engineering (MECHANICAL ENGINEERING) Programme with SECOND MAJOR IN SOCIETY & URBAN SYSTEMS (FULL-Time) (Professional Internship)

For students admitted to FULL-TIME B.ENG in AY2018/2019 (Design Stream)

Course Code and Title	Type	No of Hours Per Week				AU	Pre-requisite/ Remarks
		Lec	Tut	Lab	Total		
YEAR 1 SEMESTER 1							
MH1810 Mathematics I	C	2	1	-	3	3	
MA1008 Introduction to Computational Thinking	C	TBA	TBA	TBA	TBA	3	
PH1011 Physics	C	2	1	-	3	3	PH1011: 'A' level Physics
OR PH1012 Physics A		3	1	-	4	4	
FE1073 Introduction to Engineering and Practices	C	-	-	-	1	1	
HE9091 Principles of Economics	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	2	1	-	3	3	
HW0188 Engineering Communication I	GC	-	2	-	2	2	HW0001 (co-requisite)
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GC	-	1	-	1	1	Online, Sem 1 only
Total						**19**	
YEAR 1 SEMESTER 2							
MH1811 Mathematics II	C	3	-	-	3	3	
MA1001 Dynamics	C	2	1	-	3	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1002 Fundamental Engineering Materials	C	2	1	-	3	3	
MA2001 Mechanics of Materials	C	2	1	-	3	3	
MA2003 Introduction to Thermo-fluids	C	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	2	1	-	3	3	
Total						**21**	

Please refer here for specialised elective courses.

YEAR 2 SEMESTER 1							
MA2002 Theory of Mechanism	C	2	1	-	3	3	MA1001
MA2004 Manufacturing Process	C	2	1	-	3	3	
MA2009 Introduction to Electrical Circuits and Electronics	C	2	1	-	3	3	
MA2014 Product Presentation	C	2	-	2	4	3	
US2001 Urban Planning & Design	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	2	1	-	3	3	
HY0001 Ethics and Moral Reasoning	GC	-	1	-	1	1	Online, Sem 1 Only
ML0003 Career Course	GC	TBA	TBA	TBA	TBA	1	Online
Total						**23**	
YEAR 2 SEMESTER 2							
MA2005 Engineering Graphics	C	2	-	3	5	3	Semester 1 for AE students
MA2006 Engineering Mathematics	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA2013 Creative Thinking and Design	C	2	-	2	4	3	
MA2071 Laboratory Experiments (ME)	C	-	-	3	3	1	
MA2079 Engineering Innovation and Design	C	2	-	-	2	2	Semester 2 with 1 week in Special Term
MA3006 Fluid Mechanics	C	2	1	-	3	3	MA2003
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	2	1	-	3	3	
Data Science and Artificial Intelligence	GC	TBA	TBA	TBA	TBA	3	
Total						**21**	
YEAR 3 SEMESTER 1							
MA0101 Engineers and Society	GC	2	1	-	3	3	
MA3001 Machine Element Design	C	2	-	3	5	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	2	1	-	3	3	MA2001
MA3004 Mathematical Methods in Engineering	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA3005 Control Theory	C	2	1	-	3	3	Having read MA2006
MA3071 Engineering Experiments (ME)	C	-	-	3	3	1	
HW0288 Engineering Communication II	GC	-	2	-	2	2	HW0188 Engineering Communication I
US3001 Integrated Urban Management	UE	2	1	-	3	3	
ET0001 Entrepreneurship and Innovation	GC	-	1	-	1	1	Online, Sem 1 only
Total						**22**	
YEAR 3 SEMESTER 2							
MA3080 Professional Internship	C	-	-	-	-	10	
Total						**10**	

Please refer here for specialised elective courses.

YEAR 4 SEMESTER 1							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA3010 Thermodynamics & Heat Transfer	C	2	1	-	3	3	MA2003
MA4011 Engineering Product Design	C	3	-	3	6	4	Having read MA3001
MA48XX Major-PE 1	PE	3	-	-	3	3	
MA48XX Major-PE 2	PE	3	-	-	3	3	
US4001 Leaders in Urban Systems and Policy	UE	2	1	-	3	3	
Total						**20**	
YEAR 4 SEMESTER 2							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA48XX Major-PE 3	PE	3	-	-	3	3	
MA48XX Major-PE 4	PE	3	-	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #3	UE	2	1	-	3	3	
Total						**16**	
GRAND TOTAL (Year 1 to 4)						**152**	

Please refer here for specialised elective courses.

Curriculum Structure (4-Year Programme)

Degree in Bachelor of Engineering (MECHANICAL ENGINEERING) Programme with SECOND MAJOR IN SOCIETY & URBAN SYSTEMS (FULL-Time) (Optional PA)

For students admitted to FULL-TIME B.ENG in AY2018/2019 (Design Stream)

Course Code and Title	Type	No of Hours Per Week				AU	Pre-requisite/ Remarks
		Lec	Tut	Lab	Total		
YEAR 1 SEMESTER 1							
MH1810 Mathematics I	C	2	1	-	3	3	
MA1008 Introduction to Computational Thinking	C	TBA	TBA	TBA	TBA	3	
PH1011 Physics	C	2	1	-	3	3	PH1011: 'A' level Physics
OR PH1012 Physics A		3	1	-	4	4	
FE1073 Introduction to Engineering and Practices	C	-	-	-	1	1	
HE9091 Principles of Economics	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	2	1	-	3	3	
HW0188 Engineering Communication I	GC	-	2	-	2	2	HW0001 (co-requisite)
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GC	-	1	-	1	1	Online, Sem 1 only
Total						**19**	
YEAR 1 SEMESTER 2							
MH1811 Mathematics II	C	3	-	-	3	3	
MA1001 Dynamics	C	2	1	-	3	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1002 Fundamental Engineering Materials	C	2	1	-	3	3	
MA2003 Introduction to Thermo-fluids	C	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	2	1	-	3	3	
Total						**18**	
YEAR 2 SEMESTER 1							
MA2001 Mechanics of Materials	C	2	1	-	3	3	
MA2002 Theory of Mechanism	C	2	1	-	3	3	MA1001
MA2004 Manufacturing Process	C	2	1	-	3	3	
MA2014 Product Presentation	C	2	-	2	4	3	
US2001 Urban Planning & Design	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	2	1	-	3	3	
HY0001 Ethics and Moral Reasoning	GC	-	1	-	1	1	Online, Sem 1 Only
ML0003 Career Course	GC	TBA	TBA	TBA	TBA	1	Online
Total						**20**	

Please refer here for specialised elective courses.

YEAR 2 SEMESTER 2							
MA2005 Engineering Graphics	C	2	-	3	5	3	Semester 1 for AE students
MA2006 Engineering Mathematics	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA2009 Introduction to Electrical Circuits and Electronics	C	2	1	-	3	3	
MA2013 Creative Thinking and Design	C	2	-	2	4	3	
MA2071 Laboratory Experiments (ME)	C	-	-	3	3	1	
MA2079 Engineering Innovation and Design	C	2	-	-	2	2	Semester 2 with 1 week in Special Term
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	2	1	-	3	3	
Data Science and Artificial Intelligence	GC	TBA	TBA	TBA	TBA	3	Online
Total						**24**	
YEAR 2 SPECIAL SEMESTER							
MA3075 Professional Attachment	C	-	-	-	-	5	
Total						**5**	
YEAR 3 SEMESTER 1							
MA3001 Machine Element Design	C	2	-	3	5	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	2	1	-	3	3	MA2001
MA3004 Mathematical Methods in Engineering	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA3010 Thermodynamics & Heat Transfer	C	2	1	-	3	3	MA2003
US3001 Integrated Urban Management	UE	2	1	-	3	3	
Unrestricted Elective (UE) 1	UE	3	-	-	3	3	
ET0001 Entrepreneurship and Innovation	GC	-	1	-	1	1	Online, Sem 1 only
Total						**19**	
YEAR 3 SEMESTER 2							
MA0101 Engineers and Society	GC	2	1	-	3	3	
MA3005 Control Theory	C	2	1	-	3	3	Having read MA2006
MA3006 Fluid Mechanics	C	2	1	-	3	3	MA2003
MA3071 Engineering Experiments (ME)	C	-	-	3	3	1	
MA48XX Major-PE 1	PE	3	-	-	3	3	
HW0288 Engineering Communication II	GC	-	2	-	2	2	HW0188 Engineering Communication I
Unrestricted Elective (UE) 2	UE	2	-	-	2	2	
Total						**17**	

Please refer here for specialised elective courses.

YEAR 4 SEMESTER 1							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA4011 Engineering Product Design	C	3	-	3	6	4	Having read MA3001
MA48XX Major-PE 2	PE	3	-	-	3	3	
US4001 Leaders in Urban Systems and Policy	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #2	UE	2	1	-	3	3	
Total						**17**	
YEAR 4 SEMESTER 2							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA48XX Major-PE 3	PE	3	-	-	3	3	
MA48XX Major-PE 4	PE	3	-	-	3	3	
Society & Urban System Specialization Track: Society and Culture #3	UE	2	1	-	3	3	
Total						**13**	
GRAND TOTAL (Year 1 to 4)						**152**	

Please refer here for specialised elective courses.

Curriculum Structure (4-Year Programme)

Degree in Bachelor of Engineering (MECHANICAL ENGINEERING) Programme with SECOND MAJOR IN SOCIETY & URBAN SYSTEMS (FULL-Time) (Professional Internship)

For students admitted to FULL-TIME B.ENG in AY2018/2019 (Robotics and Mechatronics Stream)

Course Code and Title	Type	No of Hours Per Week				AU	Pre-requisite/ Remarks
		Lec	Tut	Lab	Total		
YEAR 1 SEMESTER 1							
MH1810 Mathematics I	C	2	1	-	3	3	
MA1008 Introduction to Computational Thinking	C	TBA	TBA	TBA	TBA	3	
PH1011 Physics	C	2	1	-	3	3	PH1011: 'A' level Physics
OR PH1012 Physics A		3	1	-	4	4	
FE1073 Introduction to Engineering and Practices	C	-	-	-	1	1	
HE9091 Principles of Economics	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	2	1	-	3	3	
HW0188 Engineering Communication I	GC	-	2	-	2	2	HW0001 (co-requisite)
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GC	-	1	-	1	1	Online, Sem 1 only
Total						**19**	
YEAR 1 SEMESTER 2							
MH1811 Mathematics II	C	3	-	-	3	3	
MA1001 Dynamics	C	2	1	-	3	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1002 Fundamental Engineering Materials	C	2	1	-	3	3	
MA2001 Mechanics of Materials	C	2	1	-	3	3	
MA2003 Introduction to Thermo-fluids	C	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	2	1	-	3	3	
Total						**21**	

Please refer here for specialised elective courses.

YEAR 2 SEMESTER 1							
MA2002 Theory of Mechanism	C	2	1	-	3	3	MA1001
MA2004 Manufacturing Process	C	2	1	-	3	3	
MA2009 Introduction to Electrical Circuits and Electronics	C	2	1	-	3	3	
MA2011 Mechatronics Systems Interfacing	C	2	1	-	3	3	
US2001 Urban Planning & Design	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	2	1	-	3	3	
HY0001 Ethics and Moral Reasoning	GC	-	1	-	1	1	Online, Sem 1 Only
ML0003 Career Course	GC	TBA	TBA	TBA	TBA	1	Online
Total						**23**	
YEAR 2 SEMESTER 2							
MA2005 Engineering Graphics	C	2	-	3	5	3	Semester 1 for AE students
MA2006 Engineering Mathematics	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA2012 Introduction to Mechatronics Systems Design	C	1	1	3	5	3	
MA2071 Laboratory Experiments (ME)	C	-	-	3	3	1	
MA2079 Engineering Innovation and Design	C	2	-	-	2	2	Semester 2 with 1 week in Special Term
MA3006 Fluid Mechanics	C	2	1	-	3	3	MA2003
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	2	1	-	3	3	
Data Science and Artificial Intelligence	GC	TBA	TBA	TBA	TBA	3	Online
Total						**21**	
YEAR 3 SEMESTER 1							
MA0101 Engineers and Society	GC	2	1	-	3	3	
MA3001 Machine Element Design	C	2	-	3	5	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	2	1	-	3	3	MA2001
MA3004 Mathematical Methods in Engineering	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA3005 Control Theory	C	2	1	-	3	3	Having read MA2006
MA3071 Engineering Experiments (ME)	C	-	-	3	3	1	
HW0288 Engineering Communication II	GC	-	2	-	2	2	HW0188 Engineering Communication I
US3001 Integrated Urban Management	UE	2	1	-	3	3	
ET0001 Entrepreneurship and Innovation	GC	-	1	-	1	1	Online, Sem 1 only
Total						**22**	
YEAR 3 SEMESTER 2							
MA3080 Professional Internship	C	-	-	-	-	10	
Total						**10**	

Please refer here for specialised elective courses.

YEAR 4 SEMESTER 1							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA3010 Thermodynamics & Heat Transfer	C	2	1	-	3	3	MA2003
MA48XX Major-PE 1	PE	3	-	-	3	3	
MA48XX Major-PE 2	PE	3	-	-	3	3	
US4001 Leaders in Urban Systems and Policy	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #2	UE	2	1	-	3	3	
Total						**19**	
YEAR 4 SEMESTER 2							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA4012 Mechatronics Engineering Design	C	3	-	3	6	4	Having read MA3001
MA48XX Major-PE 3	PE	3	-	-	3	3	
MA48XX Major-PE 4	PE	3	-	-	3	3	
Society & Urban System Specialization Track: Society and Culture #3	UE	2	1	-	3	3	
Total						**17**	
GRAND TOTAL (Year 1 to 4)						**152**	

Please refer here for specialised elective courses.

Curriculum Structure (4-Year Programme)

Degree in Bachelor of Engineering (MECHANICAL ENGINEERING) Programme with SECOND MAJOR IN SOCIETY & URBAN SYSTEMS (FULL-Time) (Optional PA)

For students admitted to FULL-TIME B.ENG in AY2018/2019 (Robotics and Mechatronics Stream)

Course Code and Title	Type	No of Hours Per Week				AU	Pre-requisite/ Remarks
		Lec	Tut	Lab	Total		
YEAR 1 SEMESTER 1							
MH1810 Mathematics I	C	2	1	-	3	3	
MA1008 Introduction to Computational Thinking	C	TBA	TBA	TBA	TBA	3	
PH1011 Physics	C	2	1	-	3	3	PH1011: 'A' level Physics
OR PH1012 Physics A		3	1	-	4	4	
FE1073 Introduction to Engineering and Practices	C	-	-	-	1	1	
HE9091 Principles of Economics	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #1	UE	2	1	-	3	3	
HW0188 Engineering Communication I	GC	-	2	-	2	2	HW0001 (co-requisite)
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GC	-	1	-	1	1	Online, Sem 1 only
Total						**19**	
YEAR 1 SEMESTER 2							
MH1811 Mathematics II	C	3	-	-	3	3	
MA1001 Dynamics	C	2	1	-	3	3	Having read PH1011/PH1012/CY1305 and MH1810/MH2812/ CY1201
MA1002 Fundamental Engineering Materials	C	2	1	-	3	3	
MA2003 Introduction to Thermo-fluids	C	2	1	-	3	3	
Society & Urban System Specialization Track: Society and Culture #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #1	UE	2	1	-	3	3	
Total						**18**	
YEAR 2 SEMESTER 1							
MA2001 Mechanics of Materials	C	2	1	-	3	3	
MA2002 Theory of Mechanism	C	2	1	-	3	3	MA1001
MA2004 Manufacturing Process	C	2	1	-	3	3	
MA2011 Mechatronics Systems Interfacing	C	2	1	-	3	3	
US2001 Urban Planning & Design	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #1	UE	2	1	-	3	3	
HY0001 Ethics and Moral Reasoning	GC	-	1	-	1	1	Online, Sem 1 Only
ML0003 Career Course	GC	TBA	TBA	TBA	TBA	1	Online
Total						**20**	

Please refer here for specialised elective courses.

YEAR 2 SEMESTER 2							
MA2005 Engineering Graphics	C	2	-	3	5	3	Semester 1 for AE students
MA2006 Engineering Mathematics	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA2009 Introduction to Electrical Circuits and Electronics	C	2	1	-	3	3	
MA2012 Introduction to Mechatronics Systems Design	C	1	1	3	5	3	
MA2071 Laboratory Experiments (ME)	C	-	-	3	3	1	
MA2079 Engineering Innovation and Design	C	2	-	-	2	2	Semester 2 with 1 week in Special Term
Society & Urban System Specialization Track: Urban Economics and Public Policy #2	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Urban Economics and Public Policy #3	UE	2	1	-	3	3	
Data Science and Artificial Intelligence	GC	TBA	TBA	TBA	TBA	3	
Total						**24**	
YEAR 2 SPECIAL SEMESTER							
MA3075 Professional Attachment	C	-	-	-	-	5	
Total						**5**	
YEAR 3 SEMESTER 1							
MA3001 Machine Element Design	C	2	-	3	5	3	Having read MA2001 & MA2002
MA3002 Solid Mechanics and Vibration	C	2	1	-	3	3	MA2001
MA3004 Mathematical Methods in Engineering	C	2	1	-	3	3	(MH1810 & MH1811)/ MH2812/CY1203
MA3010 Thermodynamics & Heat Transfer	C	2	1	-	3	3	MA2003
US3001 Integrated Urban Management	UE	2	1	-	3	3	
ET0001 Entrepreneurship and Innovation	GC	-	1	-	1	1	Online, Sem 1 only
Unrestricted Elective (UE) 1	UE	3	-	-	3	3	
Total						**19**	
YEAR 3 SEMESTER 2							
MA0101 Engineers and Society	GC	2	1	-	3	3	
MA3005 Control Theory	C	2	1	-	3	3	Having read MA2006
MA3006 Fluid Mechanics	C	2	1	-	3	3	MA2003
MA3071 Engineering Experiments (ME)	C	-	-	3	3	1	
MA48XX Major-PE 1	PE	3	-	-	3	3	
HW0288 Engineering Communication II	GC	-	2	-	2	2	HW0188 Engineering Communication I
Unrestricted Elective (UE) 2	UE	2	-	-	2	2	
Total						**17**	

Please refer here for specialised elective courses.

YEAR 4 SEMESTER 1							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA48XX Major-PE 2	PE	3	-	-	3	3	
MA48XX Major-PE 3	PE	3	-	-	3	3	
US4001 Leaders in Urban Systems and Policy	UE	2	1	-	3	3	
Society & Urban System Specialization Track: Water and Environmental Management #2	UE	2	1	-	3	3	
Total						**16**	
YEAR 4 SEMESTER 2							
MA4079 Final Year Project	C	-	-	4	4	4	Year 4 standing, 2 semesters
MA4012 Mechatronics Engineering Design	C	3	-	3	6	4	Having read MA3001
MA48XX Major-PE 4	PE	3	-	-	3	3	
Society & Urban System Specialization Track: Society and Culture #3	UE	2	1	-	3	3	
Total						**14**	
GRAND TOTAL (Year 1 to 4)						**152**	

Please refer here for specialised elective courses.