NUS DEPARTMENT OF MECHANICAL ENGINEERING B.Eng(ME)(Hons) & B.Soc.Sci (Hons)(Economics)Double Degree Programme (Matriculating AY15/16)

Degree Requirements	Modular Credits (MCs)	Comments
(A) University Level Requirements	Total 20 MCs	
GEMs	20 MCs	
(B) FASS Programme Requirements	Total 69 MCs	
Level 1000 Exposure modules (Asian studies)	4 MCs (from the Asian Studies Division + 8MCs of common modules)	Asian Studies modules: CH1101E, CL1101E, JS1101E, MS1101E, SE1101E, SN1101E.
Single Major (Economics)	65MCs (+36MCs of common modules. The total of 101MCs includes XF4401 and at least 25MCs at level 4000 EC modules)	
C) Engineering Programme Requirements		Some engineering courses will have more than this. As it varies according to the engineering course, students should seek advice from their department on the recommended schedule.
Engineering Modules	75 MCs (+44MCs of common modules)	BEng Program requirements including Faculty & Discipline specific requirements (core, elective, projects & FYP Thesis). It is not compulsory for DDP students to do the Industrial Attachment
(D) Common Modules	Total 44 MCs	
	Five common essential modules (20 MCs): MA1505, MA1506, PH2208 or PH2218 or PH2223, SC1101E or SC2202, ST1131A or equivalent.	See Table C
These modules map towards both degrees.	24MCs of the following modules: ONE Integrated Project XF4401 (16MCs) involving FASS & FoE supervisors in relevant areas AND 8MCs of electives: Any <u>One</u> BEng Module Any <u>One</u> BA(Econs) Module	Relevant areas for an Integrated Project: time series analysis, game theory, fuzzy logic systems, operations research, urban/transportation economics, etc. See Table D
(E) Unrestricted Elective Requirements	(Exempted)	
Jnrestricted Elective	-	Exempted under DDP Structure
TOTAL	208 MCs (min)	This is only the minimum requirement and will vary according to the engineering course. Students should seek advice from their department on the total MCs required to fulfil the DDP.

1. The 16MC XF4401 Integrated Honours Project replaces the 15MC Economics Honours Thesis/Project which is a constituent of the basic requirement of 40MC of level-4000 modules of the Economics major for the degree of BSocSci(Hons).

2. These 20 MCs of common modules replace 18 MCs in the BEng(Hons) Programme requirements.

3. PH2208 Applied Ethics or PH2218 Business Ethics or PH2223 Introduction to the Philosophy of Technology (fulfils the FoE requirement for the 3MC EG2401 Engineering Professionalism).

4. SC2202 Sociology of Work or SC1101E Making Sense of Society (fulfils the FoE requirement for the 3MC HR2002)

5. CE2407 or CN3421 or EE2012 or ST1131/ST1131A or ST2334 or MA3501 or BN2102

Semester Schedule for B.Eng. (M.E.) & B.Soc.Sci. (Hons.)(Economics) Double Degree Programme (2015/2016)

PC1431Physics IE4C1FS1501X Critical Thinking and Expository Writing 34CEG1108Electrical Engineering3C1EG1109M Statics and Mechanics of Materials4CCS1010EProgramming Methodology4C1ME2103Engineering, Visualisation and Modelling3CFASS Level-1000 Exposure module x14C2C?FASS Single Major (Economics) Module 14CGER1000 Quantitative Reasoning (GE 1 - QR)4CAGE 2 ³ CGE 2 ³ 4CSub-Total23Sub-Total23Verar 223Verar 223Vear 2Vear 2CGE 210 Fundamentals of Materials I3CMCsMCsMCsME2113Mechanics of Materials I3C1ME2101Fundamentals of Materials II3CME2121Engineering Thermodynamics4C1ME2135Fluid Mechanical Design4CME2134Fund Mechanics I4C1ME2135Fluid Mechanics II4CME2143Fund Mechanics I4C1ME2143Sensors and Actuators4CGE 3'GGE 4'GE 4'GE 4'GGME3102Materials4CAGE 4'GGME213Fund Mechanical Thit Materials IGGGGE 4'GME3102Materials4CAGE 4'GGME3103Mechanical Systems Design <th>Year 1</th> <th></th> <th></th> <th></th> <th></th> <th></th>	Year 1					
PC1431Physics IE4C1FS1501X Critical Thinking and Expository Writing 34CEG1108Electrical Engineering3C1EG1109M Statics and Mechanics of Materials4CCS1010EProgramming Methodology4C1ME2103Engineering Visualisation and Modelling3CFASS Level-1000 Exposure module x14C2 (?)FASS Single Major (Economics) Module 14CGER1000 Quantitative Reasoning (GE 1 - QR)4CAGE 2 ⁴ CGESub-Total23Vear 2Vear 2Semester 3MCsSemester 4MCsMCsME2113Mechanics of Materials I3C1ME2101Fundamentals of Materials II3C1ME2121Engineering Thermodynamics4C1ME2135Fluid Mechanical Design4CME213Fluid Mechanics I4C1ME2135Fluid Mechanics II4CME2145Fluid Mechanics I4C1ME2143Sensors and Actuators4CME3162Anaufacturing Processes4CAGE 4 ¹ CGSub-Total23Sub-Total23CVear 3CGE 4 ¹ GGME3103Mechanical Thermodynamics4C1ME3162Manufacturing Processes4CAME3162Manufacturing Processes4CAME3103Mechanical Systems Design6C1SC2202Soc	Semester 1	MCs		Semester 2	MCs	
EG1108Electrical Engineering3C1EG1109M Statics and Mechanics of Materials4CCS1010EProgramming Methodology4C1ME2103Engineering Visualisation and Modelling3CFASS Level-1000 Exposure module x14C2 (°)FASS Single Major (Economics) Module 14CGER1000 Quantitative Reasoning (GE 1-QR)4CAGE 2 ¹ CAGESub-Total23Sub-Total23Variable ConstraintsMCsYear 2Variable ConstraintsMCsSemester 4MCsMCsME2113Mechanics of Materials I3C1ME2101Fundamentals of Mechanical Design4CME2121Engineering Thermodynamics4C1MI2135Fluid Mechanics II4CME2131Phoid Mechanics I4C1ME2143Sensors and Actuators4CME2142Fundamentals of Materials II3C1ME2143Sensors and Actuators4CME2151Principles of Mechanical Engineering Materials4CAGE 4 ¹ 4CME3162Manufacuring Processes Engineering Materials4CAGE 4 ¹ 4CSub-Total23Sub-Total23Sub-Total23CGE 3 ¹ GEMCsCAGE 4 ¹ CGSub-Total23Sub-Total23Sub-Total24CGE 3 ¹ GGEScience of Materials II4	MA1505 Mathematics I ²	4	CA (*)	MA1506 Mathematics II ²	4	СА
CS1010E CS1010E Programming Methodology4C1ME2103 Fass Engineering Visualisation and Modelling3CFASS Level-1000 Exposure module x14C2 (*)FASS Single Major (Economics) Module 14CGER1000 Quantitative Reasoning (GE 1 - QR)4CAGE 21CCSub-Total2323Sub-Total23CSemester 3MCsCME2101Fundamentals of Mechanical Design4CME2113Mechanics of Materials I3C1ME2135Fuid Mechanics of Materials II3CME2121Engineering Thermodynamics4C1ME2135Fluid Mechanics II4CME2131Fluid Mechanics I4C1ME2135Fluid Mechanics II4CME3162Munfacturing Processes4CAME3112Mechanics of Materials4CME3162Munfacturing Processes4CAGE 4CME3121Mechanics Of Materials4CSub-Total23LSub-Total23Sub-Total23CME3162Menfacturing Processes4CAGE 4CMCsCSub-Total23LSub-Total23CCME3103Mechanical Systems Design6C1SC202Society (replaces HR2002)[Table C] 2ACME3122Heat Transfer4C1ME2142Feedback Control Systems4CCPH2223 Inroduc	PC1431 Physics IE	4	C1 (*)	ES1501X Critical Thinking and Expository Writing ³	4	C1
FASS Level-1000 Exposure module x14C2 (?)FASS Single Major (Economics) Module 14CGER1000 Quantitative Reasoning (GE 1 - QR)4CAGE 2sub-Total23Sub-Total2323sub-Total23Year 299999ME2113Mechanics of Materials 13C1ME2101Fundamentals of Mechanical Design4C0ME2121Engineering Thermodynamics4C1ME2141Mechanics of Materials II3C0ME2131Mechanics 14C1ME2143Sensors and Actuators4C0ME2142Fundamentals of Mechanical Design4C1ME2143Sensors and Actuators4C0ME2131Principles of Mechanical Engineering Materials4C1ME2143Sensors and Actuators4C0ME3162Manufacturing Processes (BEng Module as shown in Table D)4CAGE 4GE 4GEMesMCsSub-Total23Sub-Total23Sub-Total23Year 3CaSemester 6MCsMCsMCsME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4C4ME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4C4ME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4C4ME3103Mechanical Systems Design <td>EG1108 Electrical Engineering</td> <td>3</td> <td>C1</td> <td>EG1109M Statics and Mechanics of Materials</td> <td>4</td> <td>C1</td>	EG1108 Electrical Engineering	3	C1	EG1109M Statics and Mechanics of Materials	4	C1
GER 1000 Quantitative Reasoning (GE 1 - QR)4CAGE 2'4CASub-Total2355523Year 2Semester 3MCsSemester 4MCsMCsME2113Mechanics of Materials I3C1MF2101Fundamentals of Mechanical Design4CME2121Engineering Thermodynamics4C1ME2135Fluid Mechanics II4C1ME2131Principles of Mechanical4C1ME2135Fluid Mechanics II4C4ME2131Principles of Mechanical Engineering Materials4C1ME2143Sensors and Actuators4C4ME3162Manufacturing Processes (BEng Module as shown in Table D)4CAGE 4'CAME3112Mechanics of Machines4C4ME3103Mechanical Systems Design6CASenseter 6MCsMCsME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4C4ME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4C4ME3122Heat Transfer4C1ME3142Feedback Control Systems4C4ME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4C4ME3103Mechanical Systems Design6C1ME3142Feedback Control Systems4C4ME3103Mechanical Systems Design6C1	CS1010E Programming Methodology	4	C1	ME2103 Engineering Visualisation and Modelling	3	C1
Sub-Total23Sub-Total23Sub-Total23Sub-Total23Year 2Semester 3MCsSemester 4MCsME2113Mechanics of Materials I3C1ME2101Fundamentals of Mechanical Design4C0ME2121Engineering Thermodynamics4C1ME2135Fluid Mechanics of Materials II3C0ME2134Fluid Mechanics I4C1ME2135Fluid Mechanics II4C1ME3151Principles of Mechanical Engineering Materials4C1ME3123Sensors and Actuators4C0ME3162Manufacturing Processes (BEng Module as shown in Table D)4CAGE 4GE 4GEGE 3MCsSemester 6MCsMCsYear 3Semester 5MCsSemester 6MCsME3103Mechanical Systems Design6C1SC202Sociology of Work or SC1101E Making Sense of Society (replaces HR2002)[Table C] 24C0ME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4C0ME3122Itata Transfer4C1ME2142Feedback Control Systems4C0Ph2223Introduction To The Philosophy Of Technology (replaces FG2401)[Table C] 24C2FASS Single Major (Economics) Module 44C0FASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 54C2FASS Single Major (Economics) Module 3	FASS Level-1000 Exposure module x1	4	C2 (*)	FASS Single Major (Economics) Module 1	4	C2
Year 2 Semester 3 MCs Semester 4 MCs	GER1000 Quantitative Reasoning (GE 1 - QR) ¹	4	СА	GE 2 ¹	4	СА
Semester 3MCsSemester 4MCsME2113Mechanics of Materials I3C1ME2101Fundamentals of Mechanical Design4CME2121Engineering Thermodynamics4C1ME2131Mechanics of Materials II3CME2134Fluid Mechanics I4C1ME2135Fluid Mechanics II4CME2151Principles of Mechanical Engineering Materials4C1ME2143Sensors and Actuators4CME3162Manufacturing Processes (BEing Module as shown in Table D)4CAGE 4 ¹ Mechanics of Machines4CSub-Total23Sub-TotalSub-TotalCGE 4 ¹ MCsMCsME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4CME3122Heat Transfer4C1ME2142Feedback Control Systems4CPH2223 Introduction To The Philosophy Of Technology (replaces EG2401)[Table C] 24C2FASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 34C2	Sub-Total	23		Sub-Total	23	
ME2113 Mechanics of Materials I 3 C1 ME2101 Fundamentals of Mechanical Design 4 C1 ME2121 Engineering Thermodynamics 4 C1 ME2114 Mechanics of Materials II 3 C ME2134 Fluid Mechanics I 4 C1 ME2135 Fluid Mechanics II 4 C ME2151 Principles of Mechanical Engineering Materials 4 C1 ME2143 Sensors and Actuators 4 C ME3162 Maunfacturing Processes (BEng Module as shown in Table D) 4 CA ME3112 Mechanics of Machines 4 C Sub-Total 23 Ca GE 4 ¹ CA GE	Year 2					
ME2121Engineering Thermodynamics4C1ME2114Mechanics of Materials II3CME2134Fluid Mechanics 14C1ME2135Fluid Mechanics II4CME2151Principles of Mechanical Engineering Materials4C1ME2143Sensors and Actuators4CME3162Manufacturing Processes (BEng Module as shown in Table D)4CAME3112Mechanics of Machines4CGE 314CAGE 41CAGE 414CVear 3Vear 3Semester 5MCsMCsME3103Mechanical Systems Design6C1ME2142Feedback Control Systems4CPH2223Introduction To The Philosophy Of Technology (replaces EG2401)[Table C]4C2FASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 54C2	Semester 3	MCs		Semester 4	MCs	
ME2134Fluid Mechanics I4C1ME2135Fluid Mechanics II4CME2151Principles of Mechanical Engineering Materials4C1ME2143Sensors and Actuators4CME3162Manufacturing Processes (BEng Module as shown in Table D)4CAME3112Mechanics of Machines4CGE 314CAGE 41CAGE 414CSub-Total23Sub-Total23Semester 5MCsMCsME3103Mechanical Systems Design6C1SC202Sociology of Work or SC1101E Making Sense of Society (replaces HR2002)[Table C]4CPH2223Introduction To The Philosophy Of Technology (replaces EG2401)[Table C]4CAST1131AIntroduction to Statistics24CFASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 54C	ME2113 Mechanics of Materials I	3	C1	ME2101 Fundamentals of Mechanical Design	4	C1
ME2151Principles of Mechanical Engineering Materials4C1ME2143Sensors and Actuators4C1ME3162Manufacturing Processes (BEng Module as shown in Table D)4CAME3112Mechanics of Machines4C4GE 314CAGE 41CAGE 414C4Sub-Total23CSub-Total23C3Vear 3Vear 3Vear 5MCsMCsMCsME3103Mechanical Systems Design6C1Sc2202Sociology of Work or SC1101E Making Sense of Society (replaces HR2002)(Table C]4C4PH2223Introduction To The Philosophy Of Technology (replaces EG2401)[Table C]4C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 34C2	ME2121 Engineering Thermodynamics	4	C1	ME2114 Mechanics of Materials II	3	C1
Engineering MaterialsImage: Constraints of MaterialsImage: Constraints of MaterialsME3162 2 Manufacturing Processes (BEng Module as shown in Table D)4CAME3112 Mechanics of Machines4CAGE 314CAGE 414CASub-Total2323Sub-Total2323Year 3Sub-TotalCASemester 6MCsME3103 Mechanical Systems Design6C1SC202 Sociology of Work or SC1101E Making Sense of Society (replaces HR2002)[Table C] 24CAPH2223 Introduction To The Philosophy Of Technology (replaces EG2401)[Table C] 24CAST1131A Introduction to Statistics24CAFASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 54CA	ME2134 Fluid Mechanics I	4	C1	ME2135 Fluid Mechanics II	4	C1
(BEng Module as shown in Table D)Image: Second control of the s		4	C1	ME2143 Sensors and Actuators	4	C1
Sub-Total2323Sub-Total23Sub-Total23Sub-Total23Year 3MCsMCsME3103Mechanical Systems Design6C1Sc2202Sociology of Work or SC1101E Making Sense of Society (replaces HR2002)[Table C] 24C0ME3122Heat Transfer4C1ME2142Feedback Control Systems4C0PH2223Introduction To The Philosophy Of Technology (replaces EG2401)[Table C] 24C2FASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 54C0		4	СА	ME3112 Mechanics of Machines	4	C1
Image: Normal State Image: Normal State<	GE 3 ¹	4	СА	GE 4 ¹	4	СА
Semester 5MCsSemester 6MCsME3103Mechanical Systems Design6C1SC2202Sociology of Work or SC1101E Making Sense of Society (replaces HR2002)[Table C] 246ME3122Heat Transfer4C1ME2142Feedback Control Systems46PH2223Introduction To The Philosophy Of Technology (replaces EG2401)[Table C] 24CAST1131AIntroduction to Statistics246FASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 546	Sub-Total	23		Sub-Total	23	
ME3103Mechanical Systems Design6C1SC2202Sociology of Work or SC1101E Making Sense of Society (replaces HR2002)[Table C] 24C1ME3122Heat Transfer4C1ME2142Feedback Control Systems4CPH2223Introduction To The Philosophy Of Technology (replaces EG2401)[Table C] 24CAST1131AIntroduction to Statistics24CFASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 54C	Year 3					
ME3122 Heat Transfer4C1ME2142 Feedback Control Systems4CPH2223 Introduction To The Philosophy Of Technology (replaces EG2401)[Table C] 24CAST1131A Introduction to Statistics24CFASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 44CFASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 54C	Semester 5	MCs		Semester 6	MCs	
PH2223 Introduction To The Philosophy Of Technology (replaces EG2401)[Table C] 24CAST1131A Introduction to Statistics24CAFASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 44C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 54C2	ME3103 Mechanical Systems Design	6	C1		4	СА
Technology (replaces EG2401)[Table C] 2C2FASS Single Major (Economics) Module 24C2FASS Single Major (Economics) Module 44C2FASS Single Major (Economics) Module 34C2FASS Single Major (Economics) Module 54C2	ME3122 Heat Transfer	4	C1	ME2142 Feedback Control Systems	4	C1
FASS Single Major (Economics) Module 3 4 C2 FASS Single Major (Economics) Module 5 4 C	Technology	4	СА	ST1131A Introduction to Statistics ²	4	СА
	FASS Single Major (Economics) Module 2	4	C2	FASS Single Major (Economics) Module 4	4	C2
Singapore Studies (SS) Module 4	FASS Single Major (Economics) Module 3	4	C2	FASS Single Major (Economics) Module 5	4	C2
				Singapore Studies (SS) Module	4	СА
Sub-Total22Sub-Total24	Sub-Total	22		Sub-Total	24	

Year 4						
Semester 7	MCs		Semester 8		MCs	
B.Eng.(Hons.)/B.Soc.Sci.(Hons.)[Economics] Integrated Dissertation/Project ⁴	8	CA	B.Eng.(Hons.)/B.Soc.Sci.(Hons.)[Economics] In Dissertation/Project ⁴	tegrated	8	СА
FASS Single Major (Economics) Module 6	4	C2	FASS Single Major (Economics) Module 8		5	C2
FASS Single Major (Economics) Module 7	4	C2	FASS Elective Module (Level 3000)		4	C2
Any <u>one</u> B.A. (Econs) Module as shown in Table D	4	CA	FASS Elective Module (Level 3000)		4	C2
FASS Elective Module (Level 4000)	5	C2				
Sub-Total	25		Sub-Total		21	
Year 5						
Semester 9	MCs		Semester 10	MCs		
FASS Elective Module (Any Level)	4	C2				
FASS Elective Module (Level 4000) x 3	3 x 5 MCs	C2				
BEng Technical Elective	4	C1				
Sub-Total	23					
Total MCs	2	209				

Notes:

- (*) C1 Counted as B.Eng. degree requirement; C2 Counted as 2nd degree requirement; CA Double-counted as both degree requirements.
- 1) Students are strongly encouraged to complete all the five GE modules latest by the end of Year 2. UEM can be read in any semester and can be any modules out of your major requirements.
- 2) Common module that also satisfies FASS Single Major (Economics) Foundation Module requirements.
- 3) DDP students are encouraged to read ES1501X. However, in the event that students are not able to get ES1501X, they have to read GET1021 + ES2331 or IEM1201X + IEM2201X (For UTown Students)
- 4) <u>For BEng (Hons) + BSocSci (Hons) (1st Class) students</u> Those who are not doing Integrated Project have to do :
 1) ME FYP-ME4101 (8 MCs) + 2 TEs (8MCs) =16MCs <u>and</u> 2) EC FYP-EC4401 (15 MCs)

<u>For BEng (Hons) + BSocSci (Hons) students</u> Students have to do : 1) ME FYP-ME4101 (8 MCs) + 2 TEs (8MCs)=16MCs <u>and</u> 2) 3 x Level 4000 EC Modules (15MCs)

Table C: List of 20 MCs of Common Modules, Contributing to FASS Requirements

Module Title			
MA1505 Mathematics I			
MA1506 Mathematics II	These four modules are accepted in lieu of the FASS Faculty exposure		
PH2208 Applied Ethics (fulfils the FoE requirement for the 3 MC EG2401 Engineering Professionalism*)	requirements. They involve some social science and some humanities. Students must also complete 4 MCs of exposure modules from Asian Studies as part of the FASS requirements.		
SC2202 Sociology of Work OR SC1101E Making Sense of Society (fulfils the FoE requirement for the 3 MC HR2002 Human Capital in Organizations*)			
ST1131/ST1131A Introduction to Statistics	To replace the essential module EC2303: Foundations of Econometrics. These modules are already alternative prerequisites for the later essential module EC3303: Econometrics I.		

*These 20 MCs of common modules replace 18 MCs in the B.Eng.(Hons.) Programme requirements.

Table D: B.Eng. & B.A. modules that may be considered as common modules

B.Eng. Programme	B.Eng. modules that can be counted towards B.AEconomics major requirements*	B.A Economics modules that can be counted towards B.Eng. requirements*
Mechanical Engineering	 ME3162 Manufacturing Processes (Cost of Production) ME4262 Automation in manufacturing (economic cost-benefit analysis of automation) EE4305 Introduction to Fuzzy/Neural Systems 	 EC3322 Industrial Organisation I EC4372 Technology & Innovation EC4322 Industrial Organisation II EC5324 Economics & Cost Benefit Analysis