

# AY2021-22 AND LATER COHORTS CURRICULUM FOR COMPUTER ENGINEERING AND ECONOMICS

## DOUBLE DEGREE PROGRAMME

**PI option : 20-WEEK Professional Internship**

### SUMMARY OF ACADEMIC UNIT REQUIREMENT

Year of Study	Core		MPE		ICC		BDE	Total AU
	CE	ECON	CE	ECON	C-Core	F-Core		
1	19	9	0	0	9	3	0	40
2	21	6	0	3	8	0	0	38
3	19	9	3	3	0	2	0	36
4	3	0	6	9	0	10	0	28
5	8	0	3	18	0	0	3	32
<b>Total</b>	<b>70</b>	<b>24</b>	<b>12</b>	<b>33</b>	<b>17</b>	<b>15</b>	<b>3</b>	<b>174</b>

### Recommended Course Schedule

#### YEAR 1 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC1003	Introduction to Computational Thinking & Programming	Core	3	Nil
SC1013	Physics For Computing	Core	2	Nil
MH1810	Mathematics I	Core	3	Nil
EG1001	Engineers in Society	Core	2	Nil
HE1001	Microeconomics I	Core-Econ	3	Nil
HE1002	Macroeconomics I	Core-Econ	3	Nil
CC0003	Ethics & Civics in a Multicultural World	C-Core	2	Nil
CC0005	Healthy Living & Wellbeing	C-Core	3	Nil
			21	

#### YEAR 1 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC1005	Digital Logic	Core	3	Nil
SC1006	Computer Organisation & Architecture	Core	3	SC1005 (co-requisite)
MH1812	Discrete Mathematics	Core	3	Nil
SC1015	Introduction to Data Science & Artificial Intelligence	F-Core	3	SC1003
HE2001	Microeconomics II	Core-Econ	3	HE1001
CC0001	Inquiry & Communication in an Interdisciplinary World	C-Core	2	Nil
CC0002	Navigating the Digital World	C-Core	2	Nil
			19	

**Year 1 Total AU**

**40**

#### YEAR 2 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC1004	Linear Algebra for Computing	Core	3	SC1003 (co-requisite) & MH1810
SC1007	Data Structures & Algorithms	Core	3	SC1003
SC2000	Probability & Statistics for Computing	Core	3	MH1810
SC2107	Microprocessor System Design and Development	Core	3	SC1006
HE3001	Microeconomics III	Core-Econ	3	HE2001
CC0006	Sustainability: Society, Economy & Environment	C-Core	3	Nil
ML0004	Career & Innovative Enterprise for the Future World	C-Core	2	Nil
			20	

#### YEAR 2 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC2001	Algorithm Design & Analysis	Core	3	SC1007 & MH1812
SC2002	Object Oriented Design & Programming	Core	3	SC1003 OR SC1007
SC2103	Digital Systems Design	Core	3	SC1005
HE2002	Macroeconomics II	Core-Econ	3	HE1002
MH1820	Introduction to Statistical Theory and Methods	MPE-C	3	Nil
CC0007	Science & Technology for Humanity	C-Core	3	Nil
			18	

**Year 2 Total AU**

**38**

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-requisite
SC2005	Operating Systems	Core	3	SC1006 & SC1007
SC2006	Software Engineering	Core	3	SC2002 (co-requisite)
SC2008	Computer Network	Core	3	SC2000 & SC1004
SC2104	Sensors, Interfacing & Digital Control	Core	3	SC1006
HE2003	Econometrics I	Core-Econ	3	MH1820
HE3002	Macroeconomics III	Core-Econ	3	HE2002
			18	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-requisite
SC2079	Multidisciplinary Design Project	Core	4	Year 3 Standing
SC3103	Embedded Programming	Core	3	SC2107
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
HE3003	Econometrics II	Core-Econ	3	HE2003
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HW0288	Engineering Communication	F-Core	2	CC0001 & Year 3 standing
			18	

Year 3 Total AU **36**

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-requisite
SC3102	Signals, Systems and Transforms	Core	3	SC1004
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
			18	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-requisite
SC3079	Professional Internship	F-Core	10	Year 3 Standing
			10	

Year 4 Total AU **28**

YEAR 5 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-requisite
SC4079	Final Year Project (Part 1)	Core	4	Year 4 Standing
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
	Broadening and Deepening Elective	BDE	3	Refer to Class Schedule
			16	

YEAR 5 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-requisite
SC4079	Final Year Project (Part 2)	Core	4	Year 4 Standing
HE4xxx	Econs Prescribe Elective (Choose with in HE4xxx)	MEP-Econ 4	4	-
HE4xxx	Econs Prescribe Elective (Choose with in HE4xxx)	MEP-Econ 4	4	-
HE4xxx	Econs Prescribe Elective (Choose with in HE4xxx)	MEP-Econ 4	4	-
			16	

Year 5 Total AU **32**

# AY2023-24 AND LATER COHORTS CURRICULUM FOR COMPUTER Engineering and Economics

## DOUBLE DEGREE PROGRAMME

### PA option : 10-WEEK Professional Attachment

#### SUMMARY OF ACADEMIC UNIT REQUIREMENT

Year of Study	Core		MPE		ICC		BDE	Total AU
	CE	ECON	CE	ECON	C-Core	F-Core		
1	19	9	0	0	9	3	0	40
2	21	6	3	0	8	0	0	38
3	19	9	0	0	0	7	0	35
4	3	0	12	12	0	0	3	30
5	8	0	0	18	0	0	5	31
<b>Total</b>	<b>70</b>	<b>24</b>	<b>15</b>	<b>30</b>	<b>17</b>	<b>10</b>	<b>8</b>	<b>174</b>

#### Recommended Course Schedule

##### YEAR 1 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC1003	Introduction to Computational Thinking & Programming	Core	3	Nil
SC1013	Physics For Computing	Core	2	Nil
MH1810	Mathematics I	Core	3	Nil
EG1001	Engineers in Society	Core	2	Nil
HE1001	Microeconomics I	Core-Econ	3	Nil
HE1002	Macroeconomics I	Core-Econ	3	Nil
CC0003	Ethics & Civics in a Multicultural World	C-Core	2	Nil
CC0005	Healthy Living & Wellbeing	C-Core	3	Nil
			21	

##### YEAR 1 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC1005	Digital Logic	Core	3	Nil
SC1006	Computer Organisation & Architecture	Core	3	SC1005 (co-requisite)
MH1812	Discrete Mathematics	Core	3	Nil
SC1015	Introduction to Data Science & Artificial Intelligence	F-Core	3	SC1003
HE2001	Microeconomics II	Core-Econ	3	HE1001
CC0001	Inquiry & Communication in an Interdisciplinary World	C-Core	2	Nil
CC0002	Navigating the Digital World	C-Core	2	Nil
			19	

**Year 1 Total AU**

**40**

##### YEAR 2 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC1004	Linear Algebra for Computing	Core	3	SC1003 (co-requisite) & MH1810
SC1007	Data Structures & Algorithms	Core	3	SC1003
SC2000	Probability & Statistics for Computing	Core	3	MH1810
SC2107	Microprocessor System Design and Development	Core	3	SC1006
HE3001	Microeconomics III	Core-Econ	3	HE2001
CC0006	Sustainability: Society, Economy & Environment	C-Core	3	Nil
ML0004	Career & Innovative Enterprise for the Future World	C-Core	2	Nil
			20	

##### YEAR 2 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC2001	Algorithm Design & Analysis	Core	3	SC1007 & MH1812
SC2002	Object Oriented Design & Programming	Core	3	SC1003 OR SC1007
SC2103	Digital Systems Design	Core	3	SC1005
HE2002	Macroeconomics II	Core-Econ	3	HE1002
MH1820	Introduction to Statistical Theory and Methods	MPE-C	3	Nil
CC0007	Science & Technology for Humanity	C-Core	3	Nil
			18	

**Year 2 Total AU**

**38**

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-requisite
SC2005	Operating Systems	Core	3	SC1006 & SC1007
SC2006	Software Engineering	Core	3	SC2002 (co-requisite)
SC2104	Sensors, Interfacing & Digital Control	Core	3	SC1006
HE2003	Econometrics I	Core-Econ	3	MH1820
HE3002	Macroeconomics III	Core-Econ	3	HE2002
			15	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-requisite
SC2008	Computer Network	Core	3	SC2000 & SC1004
SC2079	Multidisciplinary Design Project	Core	4	Year 3 Standing
SC3103	Embedded Programming	Core	3	SC2107
HE3003	Econometrics II	Core-Econ	3	HE2003
HW0288	Engineering Communication	F-Core	2	CC0001 & Year 3 standing
			15	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-requisite
SC3026	Professional Attachment	F-Core	5	Year 3 Standing
			5	

**Year 3 Total AU                    35**

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-requisite
SC3102	Signals, Systems and Transforms	Core	3	SC1004
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
			15	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-requisite
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
	Broadening and Deepening Elective	BDE	3	Refer to Class Schedule
			15	

**Year 4 Total AU                    30**

YEAR 5 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-requisite
SC4079	Final Year Project (Part 1)	Core	4	Year 4 Standing
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HE4xxx	Econs Prescribe Elective (Choose with in HE4xxx)	MEP-Econ 4	4	-
	Broadening and Deepening Elective	BDE	2	Refer to Class Schedule
			16	

YEAR 5 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-requisite
SC4079	Final Year Project (Part 2)	Core	4	Year 4 Standing
HE4xxx	Econs Prescribe Elective (Choose with in HE4xxx)	MEP-Econ 4	4	-
HE4xxx	Econs Prescribe Elective (Choose with in HE4xxx)	MEP-Econ 4	4	-
	Broadening and Deepening Elective	BDE	3	Refer to Class Schedule
			15	

**Year 5 Total AU                    31**

<b>MPE Structure of Computer Engineering (U21 and after)</b>			
Course Code	Type	AU	Remarks
SC3xxx/SC4xxx	MPE	3	Choose within SC3xxx & SC4xxx
SC3xxx/SC4xxx	MPE	3	Choose within SC3xxx & SC4xxx
SC3xxx/SC4xxx	MPE	3	Choose within SC3xxx & SC4xxx
SC3xxx/SC4xxx	MPE	3	Choose within SC3xxx & SC4xxx
	<b>Total</b>	<b>12</b>	

Please refer the CE MPE Courses and Elective Focus Areas on SCSE website.

<b>MPE Structure of Economics (U21 and after)</b>			
Course Code	Type	AU	Remarks
MH1820	MPE-C	3	Compulsory MPE
Level 3xxx (6 courses)	MEP-Econ 3	18	Choose with in HE3xxx
Level 4xxx (3 courses)	MEP-Econ 4	12	Choose with in HE4xxx
	<b>Total</b>	<b>33</b>	

<b>ECONOMICS Course Lising</b>				
Course Code	Course Title	Type	AU	Pre-requisite
HE1001	Microeconomics I	Core-Econ	3	Nil
HE1002	Macroeconomics I	Core-Econ	3	Nil
HE2001	Microeconomics II	Core-Econ	3	HE1001
HE2002	Macroeconomics II	Core-Econ	3	HE1002
HE2003	Econometrics I	Core-Econ	3	MH1820
HE3001	Microeconomics III	Core-Econ	3	HE2001
HE3002	Macroeconomics III	Core-Econ	3	HE2002
HE3003	Econometrics II	Core-Econ	3	HE2003
MH1820	Introduction to Statistical Theory and Methods	MPE-C	3	Nil
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
HE4xxx	Econs Prescribe Elective (Choose with in HE4xxx)	MEP-Econ 4	4	-