

AY2023-24 CURRICULUM FOR COMPUTER SCIENCE 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
	CSC	ECON	CSC	ECON	C-Core	F-Core		
1	19	9	0	0	9	3	0	40
2	21	6	0	3	8	0	0	38
3	10	9	9	6	0	2	0	36
4	0	0	9	6	0	10	0	25
5	8	0	6	18	0	0	3	35
Total	58	24	24	33	17	15	3	174

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
SC1007	Data Structures & Algorithms	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
SC1006	Computer Organisation & Architecture	Core	3	SC1005 (co-requisite)
SC2000	Probability & Statistics for Computing	Core	3	MH1810
SC2002	Object Oriented Design & Programming	Core	3	SC1003 OR SC1007
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
SC2005	Operating Systems	Core	3	SC1006 & SC1007
SC2006	Software Engineering	Core	3	SC2002 (co-requisite)
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
SC2207	Introduction to Databases	Core	3	SC2001 (co-requisite)
SC2008	Computer Network	Core	3	SC2000 & SC1004
SC3000	Artificial Intelligence	MPE-1	3	SC1007 & SC1015 & SC2000
SC3xxx	Major Prescribe Elective (Choose within SC3xxx)	MPE-1	3	Year 3 Standing
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
SC3010	Computing Security	MPE-1	3	SC2107
HE3003	Econometrics II	Core-Econ	3	HE2003
HE3xxx	Econs Prescribe Elective (Choose with in HE3xxx)	MEP-Econ 3	3	-
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
SC3xxx	Major Prescribe Elective (Choose within SC3xxx)	MPE-1	3	Year 3 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE-2	3	Year 3 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE-2	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
SC3079	Professional Internship	F-Core	10	Year 3 Standing
			10	

Year 4 Total AU**25****YEAR 5 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-requisite
SC4079	Final Year Project (Part 1)	Core	4	Year 4 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE-2	3	Year 3 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE-2	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	-
			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	-
	Broadening and Deepening Elective	BDE	3	Refer to Class Schedule
			19	

Year 5 Total AU**35**

AY2023-24 AND LATER COHORTS CURRICULUM FOR COMPUTER SCIENCE 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
Total	70	24	15	30	17	10	8	174

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
SC1007	Data Structures & Algorithms	Core	3	SC1003
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
SC1006	Computer Organisation & Architecture	Core	3	SC1005 (co-requisite)
SC2000	Probability & Statistics for Computing	Core	3	MH1810
SC2002	Object Oriented Design & Programming	Core	3	SC1003 OR SC1007
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
SC2005	Operating Systems	Core	3	SC1006 & SC1007
SC2006	Software Engineering	Core	3	SC2002 (co-requisite)
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
SC2207	Introduction to Databases	Core	3	SC2001 (co-requisite)
SC2008	Computer Network	Core	3	SC2000 & SC1004
SC3000	Artificial Intelligence	MPE-1	3	SC1007 & SC1015 & SC2000
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
SC2079	Multidisciplinary Design Project	Core	4	Year 3 Standing
SC3010	Computing Security	MPE-1	3	SC2107
SC3xxx	Major Prescribe Elective (Choose within SC3xxx)	MPE-1	3	Year 3 Standing
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
SC3xxx	Major Prescribe Elective (Choose within SC3xxx)	MPE-1	3	Year 3 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE-2	3	Year 3 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE-2	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
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE-2	3	Year 3 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE-2	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	-
			14	

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
	Broadening and Deepening Elective	BDE	2	Refer to Class Schedule
			17	

Year 5 Total AU**31**

MPE Structure of Computer Science (U21 and after)			
Course Code	Type	AU	Remarks
SC3000	MPE-1	3	MPE (Compulsory)
SC3010	MPE-1	3	MPE (Compulsory)
SC3xxx	MPE-1	3	MPE (Choose within SC3xxx)
SC3xxx	MPE-1	3	MPE (Choose within SC3xxx)
SC4xxx	MPE-2	3	MPE (Choose within SC4xxx)
SC4xxx	MPE-2	3	MPE (Choose within SC4xxx)
SC4xxx	MPE-2	3	MPE (Choose within SC4xxx)
SC4xxx	MPE-2	3	MPE (Choose within SC4xxx)
	Total	24	

Please refer the CSC MPE Courses and Specialization on SCSE website.

MPE Structure of Economics (U21 and after)			
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
	Total	33	

ECONOMICS Course Listing				
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	-