

## 1.4.1 DEGREE PROGRAMMES AND REQUIREMENTS

### Undergraduate Study

#### CURRICULUM STRUCTURE – BACHELOR OF ENGINEERING (EEE)

(GCE 'A' Level Intake)

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE^
		LEC	TUT	LAB	TOTAL		
<b>YEAR 1 SEMESTER 1</b>							
FE1002 PHYSICS II	C	3	1	-	4	4	A LEV. PHYS./ FE0001
FE1003 CHEMISTRY	C	2	1	-	3	3	
FE1006 MATHEMATICS 1	C	2	1	-	3	3	
FE1008 COMPUTING	C	2	1	1	4	3	
FE1071 LABORATORY 1A	C	-	-	3	3	1	
HW110 EFFECTIVE COMMUNICATION	C	-	2	-	2	2	
GER-PRESCRIBED ELECTIVE 1	P	2	1	-	3	3	
TOTAL		11	7	4	22	19	
<b>YEAR 1 SEMESTER 2</b>							
FE1001 PHYSICS I	C	3	1	-	4	4	A LEV. PHYS./ FE0001
FE1005 MATERIALS SCIENCE	C	2	1	-	3	3	
FE1007 MATHEMATICS 2	C	2	1	-	3	3	
FE1072 LABORATORY 1B	C	-	-	3	1	1	
BS1004 LIFE SCIENCES	C	2	1	-	3	3	
GER-PRESCRIBED ELECTIVE 2	P	2	1	-	3	3	
GER-UNRESTRICTED ELECTIVE 1	G	2	1	-	3	3	
TOTAL		13	6	3	20	20	

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE^
		LEC	TUT	LAB	TOTAL		
<b>YEAR 2 SEMESTER 1</b>							
EE2001 CIRCUIT ANALYSIS	C	2	1	-	3	3	
EE2004 DIGITAL ELECTRONICS	C	2	1	-	3	3	
EE2006 ENGINEERING MATHEMATICS I	C	3	1	-	4	4	FE1007
EE2008 DATA STRUCTURES & ALGORITHMS	C	2	1	-	3	3	
EE2071 LABORATORY 2A	C	-	-	3	3	1	
HW210 TECHNICAL COMMUNICATION	C	-	2	-	2	2	
GER-PRESCRIBED ELECTIVE 3	P	2	1	-	3	3	
GER-UNRESTRICTED ELECTIVE 2	G	2	1	-	3	3	
TOTAL		13	8	3	24	22	
<b>YEAR 2 SEMESTER 2</b>							
EE2002 ANALOG ELECTRONICS	C	2	1	-	3	3	
EE2003 SEMICONDUCTOR FUNDAMENTALS	C	2	1	-	3	3	FE1002
EE2005 AC CIRCUITS & MACHINES	C	2	1	-	3	3	EE2001
EE2007 ENGINEERING MATHEMATICS II	C	3	1	-	4	4	FE1007
EE2010 SIGNALS & SYSTEMS	C	2	1	-	3	3	FE1006 & FE1007
EE2072 LABORATORY 2B	C	-	-	3	3	1	
GER-UNRESTRICTED ELECTIVE 3	G	2	1	-	3	3	
TOTAL		13	6	3	22	20	
<b>YEAR 2 SPECIAL SESSION</b>							
EE2079 DESIGN & INNOVATION PROJECT (5 WEEKS, FULL-TIME)	C	-	-	40	40	3	

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE <sup>^</sup>
		LEC	TUT	LAB	TOTAL		
<b>YEAR 3 SEMESTER 1</b>							
EE3001 ENGINEERING ELECTROMAGNETICS	C	2	1	-	3	3	EE2007 <sup>^</sup>
EE3002 MICROPROCESSORS	C	2	1	-	3	3	
EE3003 INTEGRATED ELECTRONICS	C	2	1	-	3	3	EE2002
EE3071 LABORATORY 3	C	-	-	3	3	1	
EE3072 PROJECT	C	-	-	3	3	1	
ELECTIVE 1	P	2	1	-	3	3	REFER TO YEAR 3 SYLLABUS
ELECTIVE 2	P	2	1	-	3	3	
GER-PRESCRIBED ELECTIVE 4	P	2	1	-	3	3	
TOTAL		12	6	6	24	20	
<b>YEAR 3 SEMESTER 2</b>							
EE3079 INDUSTRIAL ATTACHMENT (24 WEEKS, FULL-TIME)	C	-	-	40	40	10	SEE NOTE 1 <sup>1</sup>

<sup>1</sup> EE3079: Pre-requisite - Year 3 standings and have completed 4 semesters of studies.

#### ELECTRICAL & SYSTEMS OPTION GROUP & ELECTRONIC ENGINEERING OPTION GROUP STUDENTS

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE <sup>^</sup>
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 1</b>							
EE4041 HUMAN RESOURCE MANAGEMENT	C	2	1	-	3	3	
EE4079 FINAL YEAR PROJECT	C	-	-	8	8	#	SEE NOTE 2
DESIGN ELECTIVE 1	P	1	-	2	3	2	REFER TO SYLLABUS
TECHNICAL ELECTIVE 1	P	2	1	-	3	3	
TECHNICAL ELECTIVE 2	P	2	1	-	3	3	
HW310 PROFESSIONAL COMMUNICATION	C	1	1	-	2	2	HW110
GER-PRESCRIBED ELECTIVE 5	P	2	1	-	3	3	
TOTAL		10	5	10	25	16	

<sup>2</sup> Year 4 Standing, and have earned at least 86 AU (excluding GER & UE) for Engineering Year 1 students and 59 AU (excluding GE & UE) for Poly Direct-Entry students.

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE <sup>^</sup>
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 2</b>							
EE4040 ENGINEERS & SOCIETY	C	2	1	-	3	3	
EE4079 FINAL YEAR PROJECT	C	-	-	8	8	10	
DESIGN ELECTIVE 2	P	1	-	2	3	2	REFER TO SYLLABUS
TECHNICAL ELECTIVE 3	P	2	1	-	3	3	
TECHNICAL ELECTIVE 4	P	2	1	-	3	3	
TECHNICAL ELECTIVE 5	P	2	1	-	3	3	
TOTAL		9	4	10	23	24	

#### INFOCOMMUNICATION ENGINEERING OPTION GROUP STUDENTS

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE <sup>^</sup>
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 1</b>							
EE4001 SOFTWARE ENGINEERING	C	2	1	-	3	3	
EE4041 HUMAN RESOURCE MANAGEMENT	C	2	1	-	3	3	
EE4079 FINAL YEAR PROJECT	C	-	-	8	8	#	SEE NOTE 2
DESIGN ELECTIVE 1	P	1	-	2	3	2	REFER TO SYLLABUS
TECHNICAL ELECTIVE 1	P	2	1	-	3	3	
HW310 PROFESSIONAL COMMUNICATION	C	1	1	-	2	2	HW110
GER-PRESCRIBED ELECTIVE 5	P	2	1	-	3	3	
TOTAL		10	5	10	25	16	
<b>YEAR 4 SEMESTER 2</b>							
EE4040 ENGINEERS & SOCIETY	C	2	1	-	3	3	
EE4079 FINAL YEAR PROJECT	C	-	-	8	8	10	
DESIGN ELECTIVE 2	P	1	-	2	3	2	REFER TO SYLLABUS
TECHNICAL ELECTIVE 2	P	2	1	-	3	3	
TECHNICAL ELECTIVE 3	P	2	1	-	3	3	
TECHNICAL ELECTIVE 4	P	2	1	-	3	3	
TOTAL		9	4	10	23	24	

# Final year project is 10 AUs and is spread over two semesters.

<sup>2</sup> Year 4 Standing, and have earned at least 86 AU (excluding GER & UE) for Engineering Year 1 students and 59 AU (excluding GE & UE) for Poly Direct-Entry students.

**(Polytechnic Diploma Intake)**

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE^
		LEC	TUT	LAB	TOTAL		
<b>YEAR 2 SEMESTER 1</b>							
EE2001 CIRCUIT ANALYSIS	C	2	1	-	3	3	
EE2004 DIGITAL ELECTRONICS	C	2	1	-	3	3	
EE2008 DATA STRUCTURES & ALGORITHMS	C	2	1	-	3	3	
EE2071 LABORATORY 2A	C	-	-	3	3	1	
EE2090 BASIC ENGINEERING MATHEMATICS	C	2	1	-	3	3	
FE0001 FOUNDATION PHYSICS	C	2	1	-	3	3	
HW210 TECHNICAL COMMUNICATION	C	-	2	-	2	2	
TOTAL		10	7	3	20	18	
<b>YEAR 2 SEMESTER 2</b>							
EE2002 ANALOG ELECTRONICS	C	2	1	-	3	3	
EE2003 SEMICONDUCTOR FUNDAMENTALS	C	2	1	-	3	3	
EE2005 AC CIRCUITS & MACHINES	C	2	1	-	3	3	EE2001
EE2006 ENGINEERING MATHEMATICS I	C	3	1	-	4	4	
EE2010 SIGNALS & SYSTEMS	C	2	1	-	3	3	
EE2072 LABORATORY 2B	C	-	-	3	3	1	
EE2091 ENGINEERING PHYSICS	C	3	1	-	4	4	FE0001
TOTAL		14	6	3	23	21	
<b>YEAR 2 SPECIAL SESSION</b>							
EE2079 DESIGN & INNOVATION PROJECT (5 WEEKS, FULL-TIME)	C	-	-	40	40	3	

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE <sup>^</sup>
		LEC	TUT	LAB	TOTAL		
<b>YEAR 3 SEMESTER 1</b>							
EE2007 ENGINEERING MATHEMATICS II	C	3	1	-	4	4	
EE3001 ENGINEERING ELECTROMAGNETICS	C	2	1	-	3	3	EE2007 <sup>^</sup>
EE3002 MICROPROCESSORS	C	2	1	-	3	3	
EE3003 INTEGRATED ELECTRONICS	C	2	1	-	3	3	EE2002
EE3071 LABORATORY 3	C	-	-	3	3	1	
EE3072 PROJECT	C	-	-	3	3	1	
ELECTIVE 1	P	2	1	-	3	3	REFER TO SYLLABUS
ELECTIVE 2	P	2	1	-	3	3	
TOTAL		13	6	6	25	21	
<b>YEAR 3 SEMESTER 2</b>							
EE3079 INDUSTRIAL ATTACHMENT (24 WEEKS, FULL-TIME)	C	-	-	40	40	10	SEE NOTE 1 <sup>2</sup>

<sup>1</sup> EE3079: Pre-requisite - Year 3 standings and have completed 4 semesters of studies.

#### ELECTRICAL & SYSTEMS OPTION GROUP & ELECTRONIC ENGINEERING OPTION GROUP STUDENTS

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE <sup>^</sup>
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 1</b>							
EE4041 HUMAN RESOURCE MANAGEMENT	C	2	1	-	3	3	
EE4079 FINAL YEAR PROJECT	C	-	-	8	8	#	SEE NOTE 2
DESIGN ELECTIVE 1	P	1	-	2	3	2	REFER TO SYLLABUS
TECHNICAL ELECTIVE 1	P	2	1	-	3	3	
TECHNICAL ELECTIVE 2	P	2	1	-	3	3	
HW310 PROFESSIONAL COMMUNICATION	C	1	1	-	2	2	
GER-PRESCRIBED ELECTIVE 1	P	2	1	-	3	3	
TOTAL		10	5	10	25	16	

<sup>2</sup> Year 4 Standing, and have earned at least 86 AU (excluding GER & UE) for Engineering Year 1 students and 59 AU (excluding GE & UE) for Poly Direct-Entry students.

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE <sup>^</sup>
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 2</b>							
EE4040 ENGINEERS & SOCIETY	C	2	1	-	3	3	
EE4079 FINAL YEAR PROJECT	C	-	-	8	8	10	
DESIGN ELECTIVE 2	P	1	-	2	3	2	REFER TO SYLLABUS
TECHNICAL ELECTIVE 3	P	2	1	-	3	3	
TECHNICAL ELECTIVE 4	P	2	1	-	3	3	
TECHNICAL ELECTIVE 5	P	2	1	-	3	3	
GER-PRESCRIBED ELECTIVE 2	P	2	1	-	3	3	
TOTAL		11	5	10	26	27	

#### INFOCOMMUNICATION ENGINEERING OPTION GROUP STUDENTS

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / CO-REQUISITE <sup>^</sup>
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 1</b>							
EE4001 SOFTWARE ENGINEERING	C	2	1	-	3	3	
EE4041 HUMAN RESOURCE MANAGEMENT	C	2	1	-	3	3	
EE4079 FINAL YEAR PROJECT	C	-	-	8	8	#	SEE NOTE 2
DESIGN ELECTIVE 1	P	1	-	2	3	2	REFER TO SYLLABUS
TECHNICAL ELECTIVE 1	P	2	1	-	3	3	
HW310 PROFESSIONAL COMMUNICATION	C	1	1	-	2	2	
GER-PRESCRIBED ELECTIVE 1	P	2	1	-	3	3	
TOTAL		10	5	10	25	16	
<b>YEAR 4 SEMESTER 2</b>							
EE4040 ENGINEERS & SOCIETY	C	2	1	-	3	3	
EE4079 FINAL YEAR PROJECT	C	-	-	8	8	10	
DESIGN ELECTIVE 2	P	1	-	2	3	2	REFER TO SYLLABUS
TECHNICAL ELECTIVE 2	P	2	1	-	3	3	
TECHNICAL ELECTIVE 3	P	2	1	-	3	3	
TECHNICAL ELECTIVE 4	P	2	1	-	3	3	
GER-PRESCRIBED ELECTIVE 2	P	2	1	-	3	3	
TOTAL		11	5	10	26	27	

# Final year project is 10 AUs and is spread over 2 semesters.

<sup>2</sup> Year 4 Standing, and have earned at least 86 AU (excluding GER & UE) for Engineering Year 1 students and 59 AU (excluding GE & UE) for Poly Direct-Entry students.

## CURRICULUM STRUCTURE

### - NTU-GEORGIA INTEGRATED BACHELOR OF ENGINEERING (EEE) & MS (ECE) PROGRAMME

<b>YEAR 1 at NTU</b>	
FE1006 MATHEMATICS I	3
FE1007 MATHEMATICS II	3
FE1001 PHYSICS I	4
FE1002 PHYSICS II	4
FE1003 CHEMISTRY	3
FE1008 COMPUTING	3
FE1005 MATERIALS SCIENCE	3
FE1004 LIFE SCIENCES	3
FE1071 LABORATORY 1A	1
FE1072 LABORATORY 1B	1
EE2008 DATA STRUCTURES & ALGORITHMS	3
EE2004 DIGITAL ELECTRONICS	3
EE2001 CIRCUIT ANALYSIS	3
GER-CORE 1 EFFECTIVE COMMUNICATION	2
GER-PE 1	3
GER-PE 2	3
GER-UE 1	3
GER-UE 2	3
<b>YEAR-1 TOTAL</b>	<b>51</b>

<b>YEAR 2 at NTU</b>	
EE2006 ENGINEERING MATHEMATICS I	4
EE2007 ENGINEERING MATHEMATICS II	4
EE2002 ANALOG ELECTRONICS	3
EE2003 SEMICONDUCTOR FUNDAMENTALS	3
EE2010 SIGNALS & SYSTEMS	3
EE2005 AC CIRCUITS & MACHINES	3
EE2071 LABORATORY 2A	1
EE2072 LABORATORY 2B	1
EE3002 MICROPROCESSORS	3
EE3003 INTEGRATED ELECTRONICS	3
EE3001 ENGINEERING ELECTROMAGNETICS	3
EE3071 LABORATORY 3	1
EE3072 PROJECT	1
GER-CORE 2 TECHNICAL COMMUNICATION	2
GER-CORE 3 PROFESSIONAL COMMUNICATION	2
GER-PE 3	3
GER-PE 4	3
GER-UE 3	3
GER-UE 4	3
DESIGN & INNOVATION PROJECT (SPECIAL TERM)	3
<b>YEAR-2 TOTAL</b>	<b>52</b>



<b>YEAR 3 at NTU</b>	
THIRD YEAR ELECTIVE 1	3
THIRD YEAR ELECTIVE 2	3
EE4001 SOFTWARE ENGINEERING	3
FINAL YEAR DESIGN ELECTIVE 1	2
FINAL YEAR DESIGN ELECTIVE 2	2
FINAL YEAR TECHNICAL ELECTIVE 1	3
FINAL YEAR TECHNICAL ELECTIVE 2	3
FINAL YEAR TECHNICAL ELECTIVE 3*	3
FINAL YEAR TECHNICAL ELECTIVE 4*	3
FINAL YEAR PROJECT	10
GER-PE 5	3
GER-UE 5	3
GER-CORE 4 HUMAN RESOURCE MANAGEMENT	3
GER-CORE 5 ENGINEERS AND SOCIETY	3
INDUSTRIAL ORIENTATION (SPECIAL TERM)	4
YEAR-3 TOTAL	51
GRADUATION REQUIREMENTS FOR NTU B.ENG. (EEE)	154 AU

<b>YEAR 4 at Georgia Tech</b>
<p>Fulfill the Georgia Tech's M.S.(ECE) requirements:</p> <ul style="list-style-type: none"> <li>- Three ECE 6000 level (or above) courses from a combination of two technical areas: Computer Engineering and Telecommunications.</li> <li>- Three ECE 6000 level (or above) courses, two of which must be outside the above two technical areas.</li> <li>- Two minor subjects in an area outside ECE, such as Mathematics, Computer Science, etc.</li> <li>- Two electives, which may be met by credit transfer, subject to Georgia Tech's approval, from two NTU's senior-level or graduate-level courses in relevant areas.</li> </ul>

The Technical Electives for B.Eng.(EEE) in the Infocomm group are:

<b>Third Year Electives (Select 2 courses)</b>	
EE3012	Communication Principles
EE3014	Digital Signal Processing
EE3017	Computer Communications
<b>Final Year Design Electives (Select 2 courses)</b>	
EE4105	Cellular Communication System Design
EE4109	Microwave Circuit and System Design
EE4110	Optical Communication System Design
EE4413	DSP System Design
EE4706	Object-Oriented Software Engineering Design
EE4717	Web Application Design
EE4718	Enterprise Network Design
<b>Final Year Technical Electives (Select 4 courses)</b>	
EE4151	RF & Microwave Engineering
EE4152	Digital Communications
EE4153	Telecommunication Systems
EE4187	Antennas & Radio Wave Propagation
EE4188	Wireless Communications
EE4189	Spread Spectrum Communications
EE4455	Embedded Systems
EE4475	Audio Signal Processing
EE4476	Image Processing
EE4478	Digital Video Processing
EE4483	Artificial Intelligence and Data Mining
EE4490	Multimedia Systems
EE4705	Object-Oriented Programming
EE4706	Object-Oriented Software Engineering Design
EE4756	Computer Architecture
EE4757	Computer System Software
EE4758	Computer Security
EE4761	Computer Networking
EE4762	Web Services
EE4791	Database Systems

The Georgia Tech's M.S. (ECE) courses in the Computer Engineering and Telecommunications technical areas are:

<b>Computer Engineering</b>
ECE 6100 - Advanced Computer Architecture
ECE 6101 - Parallel & Distributed Computer Architecture
ECE 6102 - Dependable Distributed Systems
ECE 6110 - CAD for Computer Communication Network
ECE 6120 - Automata Theory
ECE 6121 - Combinatorial Strategies for Engineers
ECE 6130 - Advanced VLSI Systems
ECE 6132 - Computer-Aided System Design
ECE 6133 - Physical Design Automation VLSI System
ECE 6140 - Digital Systems Test
ECE 7102 - RISC Architectures
ECE 7131 - Asynchronous and Self Timed Systems
ECE 7141 - Advanced Digital Systems Test
ECE 7142 - Fault Tolerant Computing
<b>Telecommunications</b>
ECE 6390 - Satellite Communications and Navigation Systems
ECE 6601 - Random Processes
ECE 6602 - Digital Communications
ECE 6603 - Advanced Digital Communications
ECE 6604 - Personal and Mobile Communications
ECE 6605 - Information Theory
ECE 6606 - Coding Theory and Applications
ECE 6607 - Computer Communication Networks
ECE 6608 - Performance Analysis of Communication Networks
ECE 6610 - Wireless Networks
ECE 6611 - Broadband Networking
ECE 6612 - Computer Network Security
ECE 6613 - Broadband Access Networks
ECE 6614 - Multimedia Comms: Signal Proc., Networking, Applications & Standards
ECE 7611 - Advanced Communication Theory

**CURRICULUM STRUCTURE – BACHELOR OF ENGINEERING (IEM)**

**(GCE 'A' Level Intake)**

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 1 SEMESTER 1</b>							
IM1004 DIGITAL ELECTRONICS	C	2	1	0.5	3.5	3	2 Lab Modules
IM1006 MATHEMATICS 1	C	2	1	0	3	3	
IM1008 COMPUTING	C	2	1	1	4	3	12 hrs of lab.
IM1091 ENGINEERING PHYSICS	C	3	1	0	4	4	
COM204 BASIC MEDIA WRITING	C	2	2	0	4	4	
HW110 EFFECTIVE COMMUNICATION	C	1	1	0	2	2	
TOTAL		12	7	1.5	20.5	19	
<b>YEAR 1 SEMESTER 2</b>							
IM1001 DATA STRUCTURES & ALGORITHMS	C	2	1	0.5	3.5	3	
IM1002 ANALOG ELECTRONICS	C	2	1	0.5	3.5	3	
IM1003 OBJECT-ORIENTED PROGRAMMING	C	2	1	0.5	3.5	3	
IM1007 MATHEMATICS 2	C	2	1	0	3	3	
ART 190 DRAWING AS A CONCEPTUAL TOOL	C	0	3	0	3	3	
GER-PRESCRIBED ELECTIVE 1	P	2	1	0	3	3	
GER-PRESCRIBED ELECTIVE 2	P	2	1	0	3	3	
TOTAL		12	9	1.5	22.5	21	

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 2 SEMESTER 1</b>							
IM2001 SOFTWARE ENGINEERING	C	2	1	0	3	3	
IM2003 COMPUTER COMMUNICATIONS	C	2	1	0.5	3.5	3	1 Lab Module
IM2006 ENGINEERING MATHEMATICS I	C	3	1	0	4	4	IM1007
COM206 VISUAL LITERACY & COMM	C	2	2	0	4	4	
HW210 TECHNICAL COMMUNICATION	C	0	2	0	2	2	
GER-PRESCRIBED ELECTIVE 3	P	2	1	0	3	3	
TOTAL		11	8	0.5	19.5	19	

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 2 SEMESTER 2</b>							
IM2002 MICROPROCESSORS	C	2	1	0.5	3.5	3	2 Lab Modules
IM2004 SIGNALS & SYSTEMS	C	2	1	0.5	3.5	3	IM1006 & IM1007 / 2 Lab Modules
IM2007 ENGINEERING MATHEMATICS II	C	3	1	0	4	4	IM1007
ART 290 VISUAL WORKSHOP I	C	0	3	0	3	3	
GER-PRESCRIBED ELECTIVE 4	C	2	1	0	3	3	
GER-UNRESTRICTED ELECTIVE 1	P	2	1	0	3	3	
TOTAL		11	8	1	20	19	
<b>YEAR 2 SPECIAL SESSION 1</b>							
IM2079 DESIGN & INNOVATION PROJECT (5 WEEKS, FULL-TIME)	0	0	40	40	3	3	

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 3 SEMESTER 1</b>							
IM3001 DIGITAL SIGNAL PROCESSING	C	2	1	0.5	3.5	3	IM2004 /1 Lab Module
IM3002 COMMUNICATION PRINCIPLES	C	2	1	0.5	3.5	3	IM2004 /2 Lab Modules
IM3003 INFORMATION SECURITY	C	2	1	0	3	3	
IM3072 PROJECT	C	0	0	3	3	1	
COM224 WEB DESIGN & TECHNOLOGY	C	2	2	0	4	4	
ART 292 VISUAL WORKSHOP II	C	0	3	0	3	3	
GER-PRESCRIBED ELECTIVE 5	P	2	1	0	3	3	
TOTAL		10	9	4	23	20	
<b>YEAR 3 SEMESTER 2</b>							
IM3079 INDUSTRIAL ATTACHMENT (IA) * (22 WEEKS, FULL-TIME)	C	0	0	40	40	10	Year 3 Standing

\* Students may opt for 22-week Industrial Attachment (IA) (10 AUs) or 10-week Industrial Orientation (IO) (4 AUs) plus 6 AUs of college courses, or 30-week Enhanced Industrial Attachment (EIA) (13 AUs).

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 1</b>							
IM4001 MULTIMEDIA SYSTEMS	C	2	1	0	3	3	
IM4041 HUMAN RESOURCE MANAGEMENT	C	2	1	0	3	3	
IM4079 FINAL YEAR PROJECT *	C	0	0	15	15	5	Year 4 Standing
TECHNICAL ELECTIVE 1	P	2	1	0	3	3	
TECHNICAL ELECTIVE 2	P	2	1	0	3	3	
GER-UNRESTRICTED ELECTIVE 2	G	2	1	0	3	3	
TOTAL		10	5	15	30	20	
<b>YEAR 4 SEMESTER 2</b>							
IM4040 ENGINEERS & SOCIETY	C	2	1	0	3	3	
IM4079 FINAL YEAR PROJECT *	C	0	0	15	15	5	Year 4 Standing
HW310 PROFESSIONAL COMMUNICATION	C	1	1	0	2	2	HW001
TECHNICAL ELECTIVE 3	P	2	1	0	3	3	
TECHNICAL ELECTIVE 4	P	2	1	0	3	3	
GER UNRESTRICTED ELECTIVE 3	G	2	1	0	3	3	
TOTAL		9	5	15	29	19	

\* Final Year Project is 10 AUs and is spread over 2 semesters.

#### List of Final Year Technical Electives

- IM4152 Digital Communications
- IM4153 Telecommunication Systems
- IM4188 Wireless Communications
- IM4455 Embedded Systems
- IM4475 Audio Signal Processing
- IM4476 Image Processing
- IM4478 Digital Video Processing
- IM4483 Artificial Intelligence & Data Mining
- IM4756 Computer Architecture
- IM4757 Computer System Software
- IM4761 Computer Networking
- IM4762 Web services
- IM4770 Computer Graphics & Animation
- IM4771 Computer Vision
- IM4772 Visualisation
- IM4773 Geometric Modelling
- IM4774 Computer Game Programming
- IM4791 Database Systems
- ADM-4 Art-Design-Media Elective 1
- ADM-5 Art-Design-Media Elective 2
- CS321T Audio Radio Production
- COM270T Single-Camera Production

**(Polytechnic Diploma Intake)**

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 2 SEMESTER 1</b>							
IM1090 FOUNDATION PHYSICS / IM1091 ENGINEERING PHYSICS <sup>1</sup>	C	2	1	0	3	3	
IM1092 BASIC ENGINEERING MATHEMATICS	C	2	1	0	3	3	
IM2003 COMPUTER COMMUNICATIONS	C	2	1	0.5	3.5	3	1 Lab Module
REFER TO NOTE <sup>2</sup>	C	2	1	0.5	3.5	3	2 Lab Modules
REFER TO NOTE <sup>2</sup>	C	2	1	0.5	3.5	3	2 Lab Modules
COM204 BASIC MEDIA WRITING	C	2	2	0	4	4	
HW210 TECHNICAL COMMUNICATION	C	0	2	0	2	2	
TOTAL		12	9	1.5	22.5	21	
<b>YEAR 2 SEMESTER 2</b>							
IM2001 SOFTWARE ENGINEERING	C	2	1	0	3	3	
IM2002 MICROPROCESSORS	C	2	1	0.5	3.5	3	2 Lab Modules
IM2004 SIGNALS & SYSTEMS	C	2	1	0.5	3.5	3	IM1006 & IM1007 / 2 Lab Modules
IM2006 ENGINEERING MATHEMATICS I	C	3	1	0	4	4	IM1007
REFER TO NOTE <sup>2</sup>	C	2	1	0.5	3.5	3	2 Lab Modules
ART 190 DRAWING AS A CONCEPTUAL TOOL	C	0	3	0	3	3	
GER-PRESCRIBED ELECTIVE 1	P	2	1	0	3	3	
TOTAL		13	9	1.5	23.5	22	
<b>YEAR 2 SPECIAL SESSION 1</b>							
IM2079 DESIGN & INNOVATION PROJECT (5 WEEKS, FULL-TIME)	C	0	0	40	40	3	

<sup>1</sup> Students with good knowledge in Physics may opt for Engineering Physics (4 AUs).

<sup>2</sup> Choose any 3 from the following 4 courses:  
 IM1001 DATA STRUCTURES & ALGORITHMS  
 IM1002 ANALOG ELECTRONICS  
 IM1003 OBJECT-ORIENTED PROGRAMMING  
 IM1004 DIGITAL ELECTRONICS

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 3 SEMESTER 1</b>							
IM2007 ENGINEERING MATHEMATICS II	C	3	1	0	4	4	IM1007
IM3001 DIGITAL SIGNAL PROCESSING	C	2	1	0.5	3.5	3	IM2004 / 1 Lab Module
IM3002 COMMUNICATION PRINCIPLES	C	2	1	0.5	3.5	3	IM2004 / 2 Lab Modules
IM3003 INFORMATION SECURITY	C	2	1	0	3	3	
IM3072 PROJECT	C	0	0	3	3	1	
COM206 VISUAL LITERACY & COMM	C	2	2	0	4	4	
ART 290 VISUAL WORKSHOP I	C	0	3	0	3	3	
TOTAL		11	9	4	24	21	
<b>YEAR 3 SEMESTER 2</b>							
IM3079 INDUSTRIAL ATTACHMENT (IA) * (22 WEEKS, FULL-TIME)	C	0	0	40	40	10	Year 3 Standing

\* Students may opt for 22-week Industrial Attachment (IA) (10 AUs) or 10-week Industrial Orientation (IO) (4 AUs) plus 6 AUs of college courses, or 30-week Enhanced Industrial Attachment (EIA) (13 AUs).

COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 1</b>							
IM4001 MULTIMEDIA SYSTEMS	C	2	1	0	3	3	
IM4041 HUMAN RESOURCE MANAGEMENT	C	2	1	0	3	3	
IM4079 FINAL YEAR PROJECT *	C	0	0	15	15	5	Year 4 Standing
COM224 WEB DESIGN & TECHNOLOGY	C	2	2	0	4	4	
ART 292 VISUAL WORKSHOP II	C	0	3	0	3	3	
TECHNICAL ELECTIVE 1	P	2	1	0	3	3	
TOTAL		8	8	15	31	21	



COURSE CODE AND TITLE	TYPE	NO. OF HOURS PER WEEK				AU	PRE-REQUISITE / REMARKS
		LEC	TUT	LAB	TOTAL		
<b>YEAR 4 SEMESTER 2</b>							
IM4040 ENGINEERS & SOCIETY	C	2	1	0	3	3	
IM4079 FINAL YEAR PROJECT *	C	0	0	15	15	5	Year 4 Standing
TECHNICAL ELECTIVE 2	P	2	1	0	3	3	
TECHNICAL ELECTIVE 3	P	2	1	0	3	3	
TECHNICAL ELECTIVE 4	P	2	1	0	3	3	
HW310 PROFESSIONAL COMMUNICATION	C	1	1	0	2	2	HW001
GER-PRESCRIBED ELECTIVE 2	P	2	1	0	3	3	
TOTAL		11	6	15	32	22	

\* Final Year Project is 10 AUs spread over 2 semesters.

### List of Final Year Technical Electives

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- IM4774 Computer Game Programming
- IM4791 Database Systems
- ADM-4 Art-Design-Media Elective 1
- ADM-5 Art-Design-Media Elective 2
- CS321T Audio Radio Production
- COM270T Single-Camera Production

### Special Programme

#### Design and Innovation Project

The Design and Innovation Project (DIP) is a five-week practical training course for all full-time second-year EEE/IEM students. The course is designed to exercise creativity, stimulate innovation and cultivate technopreneur capabilities. It focuses on an in-depth project covering the design, prototyping, testing and documentation of innovative electrical, electronic or IT products. The course, supported by seminars on relevant issues in engineering innovation and design, requires each student to undertake a project and work in groups under the supervision of academic staff. It culminates in a project competition where the best projects vie for attractive prizes. Through proposing team-based projects, students are actively involved in this course.

## **UROP**

UROP has been offered in EEE since 1997 to encourage more undergraduates to consider R&D as a career choice.

In EEE, UROP is administered as an unrestricted elective course, carrying 3AUs. Students are expected to conduct an independent in-depth study of a particular topic under the supervision of an academic staff.

## **Undergraduate Research Experience on Campus**

The Undergraduate Research Experience on Campus (URECA) aims to cultivate a research culture amongst the most able undergraduates at NTU.

URECA is available to undergraduates (second and third years in four-year Bachelors degree programmes and second years in three-year Bachelors degree programmes) who have excelled in their academic examinations.

This 'select' group of undergraduates are eligible for a stipend and if they choose to undertake URECA, they will be known as NTU President Research Scholars (NTU PRSs). In URECA, NTU PRSs are required to offer the Undergraduate Research general elective where they will work on a research project (from any school) for an average of ten hours/week for eight months in an academic year.