



BEng (EEE) Third Year Electives and Internships

Tan Yap Peng
Associate Chair (Academic), EEE

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MAJOR COMPONENTS

- ❑ 2 Year-3 Core Courses + 2 Prescribed Elective Courses
- ❑ 4 Core Experiments (2 for each Core) + 2 Elective Experiments associated with the 2 Prescribed Elective courses
- ❑ Design & Innovation Project
- ❑ Internship: Industrial Attachment (IA), Industrial Orientation (IO), Enhanced Industrial Attachment (EIA) – Choose One



THIRD YEAR COURSES (IA Option)

Year 1 Intake (from AY2011/12)		Poly Direct-Entry Intake (from AY2012/13)	
Semester 1			
EE3001	Engineering Electromagnetics	EE3001	Engineering Electromagnetics
EE3002	Microprocessors	EE3002	Microprocessors
EE3080	Design & Innovation Project	EE3080	Design & Innovation Project
EE3xxx	Prescribed Elective 1	EE2003	Semiconductor Fundamentals EE2007
EE3xxx	Prescribed Elective 1		Engineering Mathematics II
EE0001	Impact of Electro. Radiation on Humans	EE2008	Data Structures & Algorithms
Semester 2			
EE3179 Industrial Attachment			



THIRD YEAR COURSES (IO Option)

Year 1 Intake (from AY2011/12)		Poly Direct-Entry Intake (from AY2012/13)	
Semester 1			
EE3001	Engineering Electromagnetics	EE3001	Engineering Electromagnetics
EE3002	Microprocessors	EE3080	Design & Innovation Project
EE3080	Design & Innovation Project	EE2003	Semiconductor Fundamentals EE2007
EE3xxx	Prescribed Elective 1		Engineering Mathematics II
Unrestricted Elective		EE2008	Data Structures & Algorithms
Semester 2			
EE3xxx	Prescribed Elective 2	EE3002	Microprocessors
EE0001	Impact of Electro. Radiation on Humans	EE3xxx	Prescribed Elective 1
GER Elective [STS]		EE3xxx	Prescribed Elective 1
GER Elective		EE0001	Impact of Electro. Radiation on Humans
Unrestricted Elective		Unrestricted Elective	
Unrestricted Elective			
Special Term (May – July)			
EE3176 Industrial Orientation			



PRESCRIBED ELECTIVE COURSES

Choose two (2)

Code	Title	Elective Lab
EE3010	Electrical Devices and Machines	E3010L
EE3011	Modelling & Control	E3011L
EE3012	Communication Principles	E3012L
EE3013	Semiconductor Devices & Processing	E3013L
EE3014	Digital Signal Processing	E3014L
EE3015	Power Systems and Protection	E3015L
EE3017	Computer Communications	E3017L
EE3018	Introduction to Photonics *	E3018L
EE3019	Integrated Electronics	E3019L

*EE3018 is only offered in Semester 1.



CHOICE OF PRESCRIBED ELECTIVES

- ❑ Select two Prescribed Electives.
- ❑ Third Year Electives are pre-requisites for some Final Year Designs & Technical Electives.
- ❑ Your choice should be guided by your intended Final Year Option.
- ❑ Additional Third Year Elective courses can be taken as Unrestricted Electives (UE).



FINAL YEAR CURRICULUM

3 Options

ELECTRICAL & SYSTEMS
ENGINEERING

ELECTRONIC ENGINEERING

INFOCOMMUNICATIONS
ENGINEERING



FINAL YEAR CURRICULUM

8 Specialisations:

ELECTRICAL &
SYSTEMS
ENGINEERING

- Intelligent Systems and Control Engineering
- Biomedical Electronics
- Electrical Power and Energy

ELECTRONIC
ENGINEERING

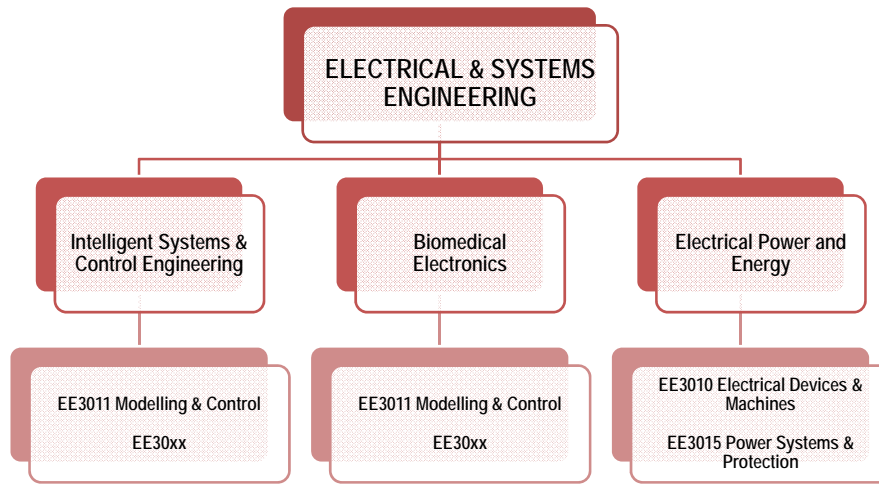
- Integrated Circuits Design
- Microelectronics

INFOCOM-
MUNICATIONS
ENGINEERING

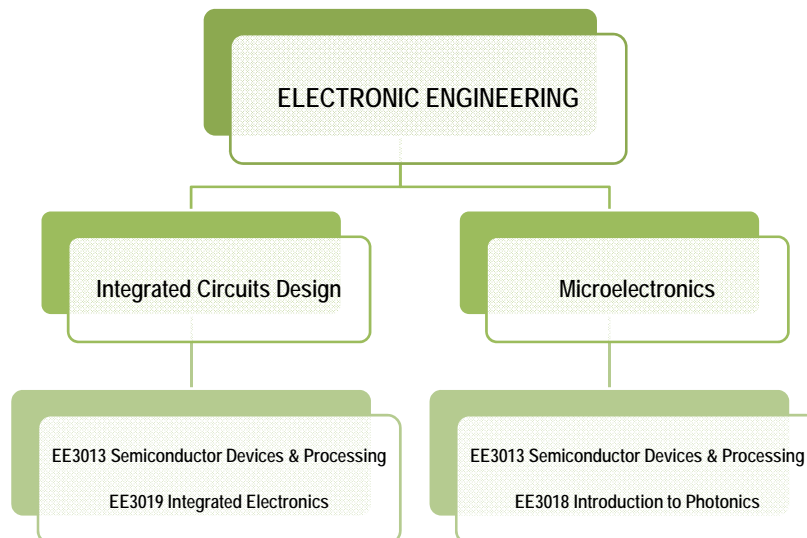
- Communication Engineering
- Computer Engineering
- Digital Media Processing



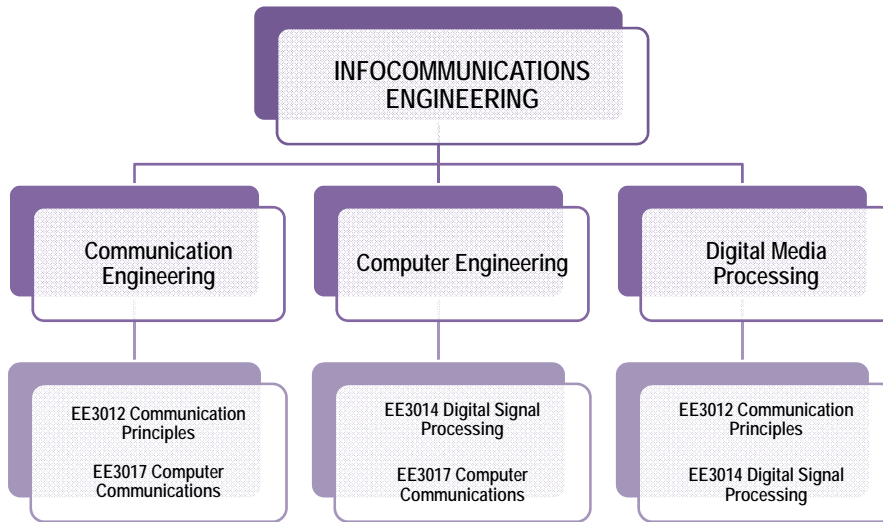
PRE-REQUISITES FOR FINAL YEAR OPTION



PRE-REQUISITES FOR FINAL YEAR OPTION

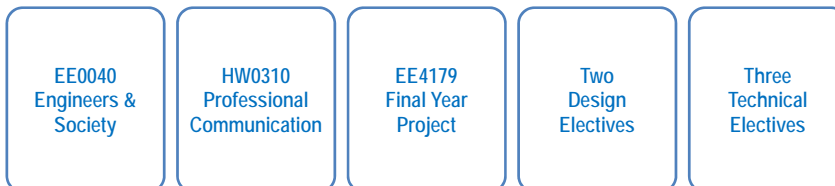


PRE-REQUISITES FOR FINAL YEAR OPTION



FINAL YEAR COURSES

ELECTRICAL & SYSTEMS ENGINEERING
ELECTRONIC ENGINEERING
INFOCOMMUNICATION ENGINEERING



ELECTRICAL & SYSTEMS ENGINEERING

Design Electives (Choose 2)

- EE4207 Control Engineering Design
- EE4208 Intelligent System Design
- EE4503 Power Engineering Design
- EE4504 Design of Clean Energy Systems
- EE4901 Biomedical Control System Design
- EE4902 Design of Medical Information Processing Systems

Technical Electives (Choose 3)

- EE4001 Software Engineering
- EE4265 Process Control Systems
- EE4266 Computer Vision
- EE4268 Robotics and Automation
- EE4273 Digital Control Systems
- EE4285 Computational Intelligence
- EE4530 Power System Analysis & Control
- EE4532 Power Electronics & Drives
- EE4534 Modern Distribution Systems with Renewable Resources
- EE4903 Physiological Systems Analysis
- EE4904 Biomedical Instrumentation
- EE4905 Biomedical Signal Processing
- EE4906 Medical Imaging Systems
- EE4840 Biophotonics



ELECTRONIC ENGINEERING

Design Electives (Choose 2)

- EE4303 Mixed-Signal IC Design
- EE4304 Radio Frequency Integrated System Design
- EE4305 Digital Design with HDL
- EE4613 CMOS Process & Device Simulation
- EE4614 Device Parameter Extraction & Layout Implementation

Technical Electives (Choose 3)

- EE4001 Software Engineering
- EE4340 VLSI Systems
- EE4341 Advanced Analog Circuits
- EE4343 Radio Frequency Circuits
- EE4344 Analysis & Design of Integrated Circuits
- EE4645 Microfabrication Engineering
- EE4646 VLSI Technology
- EE4647 Microelectronic Devices
- EE4648 Flat Panel Display Technologies
- EE4694 IC Reliability and Failure Analysis
- EE4838 Laser Engineering and Applications
- EE4839 Fibre Optic Communications
- EE4840 Biophotonics



INFOCOMMUNICATIONS ENGINEERING

Design Electives (Choose 2)

- EE4105 Cellular Communication System Design
- EE4109 Microwave Circuit and System Design
- EE4110 Optical Communication System Design
- EE4413 DSP System Design
- EE4717 Web Application Design
- EE4718 Enterprise Network Design

Technical Electives (Choose 3)

- EE4001 Software Engineering
- EE4151 RF and Microwave Engineering
- EE4152 Digital Communications
- EE4153 Telecommunication Systems
- EE4188 Wireless Communications
- EE4189 Spread Spectrum Communications
- EE4190 Introduction to Modern Radar
- EE4455 Embedded Systems
- EE4475 Audio Signal Processing
- EE4476 Image Processing
- EE4478 Digital Video Processing
- EE4483 Artificial Intelligence & Data Mining
- EE4490 Multimedia Systems
- EE4756 Computer Architecture
- EE4758 Computer Security
- EE4761 Computer Networking
- EE4791 Database Systems



THIRD YEAR INTERNSHIPS



PRE-REQUISITES FOR INTERNSHIPS

- ❑ Engineering Year-1 Intake: 3rd Year standing & have completed 4 semesters of study
- ❑ Poly Direct-Entry: 3rd Year standing & have completed 2 semesters of study

Important Note:

- A PASS mark in Attachment is necessary for the award of the degree (except for students who are exempted).
- All attachment types are ungraded, i.e. PASS/FAIL.
- The first 4 AUs for both IA and EIA are used to meet the 4-AU requirement on internship. The extra 4 AUs earned for IA and 8 AUs for EIA can only be used to offset the requirement for Unrestricted Electives



CHOICE OF INTERNSHIPS

	INDUSTRIAL ORIENTATION	INDUSTRIAL ATTACHMENT	ENHANCED I.A. / INTL RESEARCH ATT.
PERIOD	10 WEEKS [MAY – JUL]	20 WEEKS [SEM 1 / SEM 2]	30 WEEKS [SEM 2]
ACADEMIC UNIT (CORE)	4	8	12
GRADING	PASS/FAIL	PASS/FAIL	PASS/FAIL
ASSESSMENTS	ONCE	TWICE	THRICE
SUBMISSION OF FINAL REPORT	YES	YES	YES
EST. APPLICATION PERIOD	FEB	SEP & APR	SEP



New Option: IO + FYP

IO + FYP

Industrial Orientation

- 10 weeks
- Exposure to actual work environment
- Helps develop & enhance students' academic, personal & professional competencies

Final Year Project

- 1 full semester; 18 weeks
- Extended attachment experience, greater industrial exposure
- In-depth research study & investigation
- Apply knowledge on real-world practical problems



Supervision & Assessment

- Joint supervision by Company Supervisor and Academic Supervisor (Examiner)
 - Relevant expertise
 - For FYP, students to submit bi-weekly reports and meet Academic Supervisor in person at least once every 2 weeks
- Separate assessments for IO and FYP at the end of each component



Eligibility

You will be eligible to do the IO+FYP if you meet the following requirements after the exam results of Year-3 Sem 2 are available.

- Year-4 standing or in the final year
- Have a balance of no more than 40 AUs (inclusive of the 4 AUs for IO and 8 AUs for FYP) for graduation
- Have at least a CGPA of 3.5



THIRD YEAR ELECTIVES' SELECTION

Online Selection Period:

System opens on 13 March (1800 hours)
System closes on 19 March (2359 hours)

<http://www.ntu.edu.sg/studentlink>

This selection exercise is compulsory to all 2nd year students. Students, who did not participate in the exercise, may not be able to register for courses of their choices in AY2014-2015.



Q & A



Thank You

