THE NEW ENG (EEE) CURRICULUM

The new EEE curriculum focuses on broad-based training to provide flexibility of career choices and nurture lifelong learning. It strikes a judicious balance between breadth and depth to provide a solid foundation in the physical sciences and mathematics, on the one hand, and comprehensive training in electrical & electronic engineering on the other.

Also included are general education modules to broaden the education beyond the technical and professional. They comprise subjects in humanities, arts and social sciences (HSS) and general electives. Together with other essential modules in Communication Skills and Human Resource Management, the general education modules comprise a total of 36 Academic Units (AU) and account for about 23% of the overall curriculum workload. These modules are spread out over the 4 years of study.

FIRST YEAR CURRICULUM

The first year curriculum covers fundamentals in the physical sciences such as Mathematics, Physics, Chemistry and Materials Science, to provide a strong foundation for the specialisation years of studies. It also includes one communication-related module and two HSS modules to provide a broadening in non-technical areas that is beneficial to professional careers and lifelong learning.

SECOND YEAR CURRICULUM

In the second year, further modules in Engineering Mathematics are included to strengthen the foundation for more advanced study in electrical & electronic engineering. Other core fundamental electrical & electronic engineering modules such as Circuit Analysis, Electronics, Data Structures, Signals & Systems and AC Circuits & Machines are introduced to provide a broad background for all areas of electrical & electronic engineering. In addition, students undertake 2 modules of laboratory experiments and a Design & Innovation Project to provide the necessary grounding in the practical skills required for engineers.

For Polytechnic Diploma holders who are directly admitted to the second year, bridging modules on Basic Engineering Mathematics and Foundation Physics are provided to ease their transition into the degree programme. These students are also required to read a further Physics module to assist in preparing them for the other subjects in electrical & electronic engineering.

THIRD YEAR CURRICULUM

In the third year, basic principles which underpin a broad spectrum of technologies encompassed by the area of electrical and electronic engineering are taught. These include core modules on Electromagnetics, Integrated Electronics and Microprocessors. In addition, students will select 2 elective modules from a list of more specialized modules in preparation for more in-depth specialization in their final year. The elective subjects are Modelling & Control, Communication Principles, Semiconductor Devices & Processing, Digital Signal Processing, Power Systems & Conversion, Optics and Computer Communications.

FOURTH YEAR CURRICULUM

In the final year, students are given the flexibility to select their prescribed elective subjects under 3 broad groups, namely Electrical Engineering, Electronic Engineering and Infocommunication Engineering. They may select any 2 design elective subjects and at least 3 technical elective subjects from one of the groups and one more technical elective subject from any group.

However, students who prefer a more in-depth study can select the subjects from one of 10 areas of specialization, namely, Biomedical Engineering, Communication Engineering, Computer Engineering, Control & Automation, Digital Signal Processing, Electronics, Infocommunications, Microelectronics, Photonics and Power Engineering.

In addition to the elective technical subjects, all students are required to take a compulsory subject in Software Engineering and other subjects like Human Resource Management and Engineers & Society.