

NUS ECE empowers you for a career in 5G and Next Gen Networks

The rapid development of mobile Internet and **Internet of Things (IoT)** in recent years has led the industry to focus on **5G technology**. This theme provides a grounding in the fundamentals of 5G wireless systems. The topics covered in the theme include fundamentals of 5G communication systems and the basic design of transceivers for communication systems, including circuit implementation. Further topics include system level concepts such as wireless network design and protocols, electromagnetic interference, and digital communications. Additionally, some advanced topics are covered to equip students with state-of-the-art industry trends and technologies. Further, practical issues and concepts are dealt with in the professional development modules.



Upon successful completion, students should understand the fundamental concepts, design, and applications of 5G wireless communication systems, and be well equipped to contribute to the Telecommunications and IoT industries and more broadly in the Information and Communication sector. Students will be able to understand the importance of 5G technology as an enabler of industrial transformation such as smart nation and autonomous transport solutions. A new era of unprecedented career opportunities is fast approaching.

The B.Eng. (Electrical Engineering) programme provides a suite of modules, projects and internship opportunities to empower you for an exciting and rewarding career in this industry.

Representative Modules and Related Programmes

EE3104C Intro. to RF and Microwave Systems & Circuits	EE4210 Network Protocols and Applications	Specialisation in Internet of Things
EE4104 Microwave Circuits and Devices	EE4204 Computer Networks	Specialisation in Robotics
EE4101 Radio-Frequency Communications	EE4211 Data Science for Internet of Things	Minor in Data Engineering
EE4112 Radio Frequency Design and Systems	EE5135 Digital Communications	
EE3131C Communication Systems		

Students who perform well in selected modules will obtain a **Certificate in 5G and Next Gen Networks**.

Projects

Students will have the opportunity to work on leading edge projects, for example, intrusion detection in IoT networks, IoT enabled wearables to monitor patients' conditions in wards, security analysis of password strength in wireless networks; blockchain based solutions for e-governance, quantum encryption and key distribution, multi-user covert communication, analytics and visualization of IoT sensor data, and social networking next gen.

Internships

I2R, IME, IHPC, Thales, R&S, STE, DSO, Delphi, Skyworks (Singapore), Singcomm, Marvell, Siemens Medical. Other than these, students can pursue internships overseas under the NUS Overseas Colleges (NOC) programme.

Job Prospects

Huawei, Singcomm, STE, Compex, Infineon, DSO, I2R, IME, IHPC, Thales, R&S, Delphi, Skyworks (Singapore), Desay SV Automotive (Singapore), Marvell, Siemens Medical, Google, Qualcomm, Analog Devices.

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