Addendum to the Programme Specification

5161 MEng Electrical and Electronic Engineering

This Addendum has been produced to highlight the key changes made to the existing Programme Specification as a result of the University's response to the Covid-19 Pandemic. You should read it in conjunction with the relevant Programme Specification from the year you started your programme.

Programme Specification for entry in 2020-21
Programme Specification for entry in 2019-20
Programme Specification for entry in 2018-19

University level information

In view of COVID-19, the University has had to make changes to some elements of programme delivery for 2020-21. These changes have included the method of delivery, such as face-to-face and online, and the number of modules available.

The University aims to provide as much of a face-to-face component to your education as prevailing conditions at the time allow, combined with its new blended approach that will develop active independent and group online learning.

As the COVID-19 pandemic develops, the University's response to this and other issues may likewise need to evolve. The University will consult with student representatives as necessary and appropriate and will communicate changes to you as soon as practicable so that you have the information you need to understand how a change may impact you and what steps you need to take next. The University remains committed to supporting you as you learn.

Programme Information

In light of Covid-19, there will be some changes to how some group work tasks and lab works will be organised. ECS aims to reopen the teaching laboratories and hold regular scheduled sessions in S1 2020-21, following social distancing rules and regulations. In some cases, we may have redesigned some laboratory experiments to be software based or virtual. In other cases, you may be working on numerical data obtained from physical experiments.

All timetabled lectures that in a normal (i.e. face-to-face) situation could be recorded will be recorded and will be made available to all students registered on the module. The lecturing team for each module will organise question-and-answer sessions, or discussion activities aimed at approximating as much as possible personal interaction, as it occurs during lectures or seminars. Where written examinations are unable to take place due to social distancing measures, an alternative form of assessment will be offered for 2020-21.

Programme Structure

Where optional modules have been specified, the following is an indicative list of available optional modules, which are subject to change each academic year. Please note that, in some instances, modules have limited spaces available.

Programme:	MEng Electrical & Elec Eng - 5161

Term:	2020-2021 Academic Session (202021)
Area title:	5161-1 - MEng Elec & Elec Eng Part 1

Compulsory Modules
You must complete the following modules:

Module	Module Title	Credit	Core?	Semester / Term
ELEC 1028	TT Personal Tutorial	0	No	Full Academic Year
ELEC 1029	TT ELEC Labs Yr1	0	No	Full Academic Year
ELEC 1200	Electronic Circuits	15	Yes	Semester 1
ELEC 1201	Programming	15	Yes	Semester 1
ELEC 1202	Digtl Systms & Microprocessors	15	Yes	Semester 1
ELEC 1205	Solid State Devices	15	Yes	Semester 2
ELEC 1206	Electrical Materials & Fields	15	Yes	Full Academic Year
ELEC 1207	Electronic Systems	15	Yes	Semester 2
MATH 1055	Maths for Elec & Elec Eng	15	Yes	Full Academic Year
MATH 1061	Engineering Maths Workshop	0	No	Full Academic Year

Optional Modules
You must choose from the following modules:

Module		Credit	Semester / Term
Rule 1	**Select 1 core module**		
ELEC 1203	Mechanics	15	Semester 2
ELEC 1204	Advanced Programming	15	Semester 2

Programme:	MEng Electrical & Elec Eng - 5161
Term:	2020-2021 Academic Session (202021)
Area title:	5161-2 - MEng Elec & Elec Eng Part 2

Compulsory Modules
You must complete the following modules:

Module	Module Title	Credit	Core?	Semester/Term
ELEC 2208	Power Electronics and Drives	15	No	Semester 2
ELEC 2217	Electrical & Electron Eng Desi	15	No	Semester 2
ELEC 2218	TT EEE Labs Yr 2	0	No	Full Academic Year
ELEC 2219	Electromagnetism for EEE	15	No	Semester 1
ELEC 2220	Control & Communications	15	No	Semester 1
ELEC 2221	Digital Syst & Signal Process	15	No	Semester 1
ELEC 2229	Powr Circuits and Transmission	15	No	Semester 2
MATH 2047	Maths for Elec & Elec Eng II	15	No	Semester 1

Optional Modules
You must choose from the following modules:

Module		Credit	Semester/Term
Rule 1	**Select 1 Semester 2 module**		
ELEC 2201	Devices	15	Semester 2
ELEC 2204	Computer Engineering	15	Semester 2
ELEC 2206	Materials	15	Semester 2
ELEC 2213	Electrical Machines	15	Semester 2
ELEC 2216	Advanced Electronic Systems	15	Semester 2
ELEC 2228	Photonics I	15	Semester 2

Programme:	MEng Electrical & Elec Eng - 5161
Term:	2020-2021 Academic Session (202021)
Area title:	5161-3 - MEng Elec & Elec Eng Part 3

Compulsory Modules
You must complete the following modules:

Module	Module Title	Credit	Core?	Semester / Term
COMP 3200	Part III Individual Project	45	Yes	Full Academic Year
COMP 3219	Engineering Management & Law	15	No	Semester 1

Optional Modules
You must choose from the following modules:

Module		Credit	Semester / Term
Rule 1	**Select 4 modules** **Two modules in Semester 1 and two modules in Semester 2.** **Minimum of one module from the following sets: 'electrical' or 'electrical and electronic'.** **Minimum of one module from the following sets: 'electronic' or 'electrical and electronic'.**		
Rule SET 1	**Select 0 to 3 modules** **Electrical**		
ELEC 3211	High Voltage Engineering	15	Semester 2
ELEC 3213	Power Systems Engineering	15	Semester 2
ELEC 3214	Power Systems Technology	15	Semester 1
Rule SET 2	**Select 0 to 3 modules** **Electronic**		
ELEC 3202	Green Electronics	15	Semester 2
ELEC 3203	Digital Coding and Transmission	15	Semester 1
ELEC 3204	Wireless and Optical Communications	15	Semester 2

ELEC 3207	Nanoelectronic Devices	15	Semester 1
ELEC 3208	Analogue and Mixed Signal Electronics	15	Semester 2
ELEC 3218	Signal and Image Processing	15	Semester 1
ELEC 3219	Advanced Computer Architecture	15	Semester 2
ELEC 3221	Digital IC and Systems Design	15	Semester 1
ELEC 3223	Introduction to Bionanotechnology	15	Semester 1
ELEC 3227	Embedded Networked Systems	15	Semester 1
Rule SET 3	**Select 0 to 3 modules** **Electrical and electronic**		
ELEC 3201	Robotic Systems	15	Semester 1
ELEC 3205	Control System Design	15	Semester 1
ELEC 3206	Digital Control System Design	15	Semester 2
Rule SET 4	**Select 0 to 1 modules** **COMP3223 is a prerequisite for COMP6247-8 in the final year**		
COMP 3222	Machine Learning Technologies	15	Semester 1
COMP 3223	Foundations of Machine Learning	15	Semester 1
Rule SET 5	**Select 0 to 2 modules**		
ANTH 2001	Cosmology, Ritual and Belief	15	Semester 2
COMP 3212	Computational Biology	15	Semester 2
COMP 3215	Real-Time Computing and Embedded Systems	15	Semester 1
COMP 3217	Security of Cyber Physical Systems	15	Semester 2
COMP 3225	Natural Language Processing	15	Semester 2

COMP 3226	Web and Cloud Based Security	15	Semester 1
ELEC 2201	Devices	15	Semester 2
ELEC 2204	Computer Engineering	15	Semester 2
ELEC 2206	Materials	15	Semester 2
ELEC 2213	Electrical Machines	15	Semester 2
ELEC 2216	Advanced Electronic Systems	15	Semester 2
ELEC 2228	Photonics I	15	Semester 2
LANG XX15	Language Module	15	Show Electives
MATH 3081	Operational Research	15	Semester 1
MATH 3082	Optimisation	15	Semester 2
MATH 3083	Advanced Partial Differential Equations	15	Semester 1
MATH 3084	Integral Transform Methods	15	Semester 2
SOCI 2003	Gender & Society	15	Semester 2
UOSM 2004	Global Health	15	Semester 1
UOSM 2017	Intercultural Communication in a Global World	15	Semester 2
UOSM 2022	Social Enterprise	15	Semester 1
UOSM 2031	Engineering Replacement Body Parts	15	Semester 2

Programme:	MEng Electrical & Elec Eng - 5161
Term:	2020-2021 Academic Session (202021)
Area title:	5161-4 - MEng Elec & Elec Eng Part 4

Compulsory Modules

You must complete the following modules:

Module	Module Title	Credit	Core?	Semester / Term
ELEC 6200	Group Design Project	45	Yes	Semester 1

Optional Modules

You must choose from the following modules:

Module		Credit	Semester / Term
Rule 1	**Select 5 modules** **One module in Semester 1 and four modules in Semester 2.** **Minimum of one module from the following sets: 'electrical' or 'electrical and electronic'.** **Minimum of one module from the following sets: 'electronic' or 'electrical and electronic'.**		
Rule SET 1	**Select 0 to 4 modules** **Electrical**		
ELEC 6220	Power System Economics	15	Semester 1
ELEC 6221	Power Generation: Technology and Impact on Society	15	Semester 1
ELEC 6222	Power and Distribution	15	Semester 2
ELEC 6225	High Voltage Insulation Systems	15	Semester 2
ELEC 6226	Power Electronics for DC Transmission	15	Semester 2
Rule SET 2	**Select 0 to 4 modules** **Electronic**		
ELEC 6201	Microfabrication	15	Semester 1
ELEC 6206	Nanofabrication and Microscopy	15	Semester 2
ELEC 6213	Image Processing	15	Semester 2
ELEC 6214	Advanced Wireless Communications Networks and Systems	15	Semester 2

ELEC 6217	Wireless Transceiver Design and Implementation	15	Semester 1
ELEC 6230	VLSI Systems Design	15	Semester 1
ELEC 6231	VLSI Design Project	15	Semester 2
ELEC 6232	Analogue and Mixed Signal CMOS Design	15	Semester 2
ELEC 6233	Digital Systems Synthesis	15	Semester 2
ELEC 6234	Embedded Processors	15	Semester 2
ELEC 6237	Secure Hardware and Embedded Devices	15	Semester 1
ELEC 6242	Cryptography	15	Semester 2
Rule SET 3	**Select 0 to 4 modules** **Electrical and electronic**		
ELEC 6203	Microsensor Technologies	15	Semester 1
ELEC 6204	Microfluidics and Lab-on-a-Chip	15	Semester 2
ELEC 6208	Bio/Micro/Nano Systems	15	Semester 2
ELEC 6212	Biologically Inspired Robotics	15	Semester 2
ELEC 6227	Medical Electrical and Electronic Technologies	15	Semester 2
ELEC 6228	Applied Control Systems	15	Semester 2
ELEC 6245	Wireless Networks	15	Semester 2
ELEC 6253	Machine Learning for Wireless Communications	15	Semester 2
Rule SET 4	**Select 0 to 2 modules**		
COMP 6202	Evolution of Complexity	15	Semester 2
COMP 6204	Software Project Management and Secure Development	15	Semester 1
COMP 6208	Advanced Machine Learning	15	Semester 2

COMP 6212	Computational Finance	15	Semester 2
COMP 6228	Individual Research Project	15	Semester 2
COMP 6237	Data Mining	15	Semester 2
COMP 6247	Reinforcement and Online Learning	15	Semester 2
COMP 6248	Deep Learning	15	Semester 2
MATH 6141	Numerical Methods	15	Semester 1
MATH 6149	Modelling with Differential Equations	15	Semester 2
OPTO 6007	Silicon Photonics	15	Semester 1
OPTO 6008	Optical Fibres	15	Semester 1