

2019-20 STMS Undergraduate Stage 2 & 3 Module Handbook

16 School of Engineering and Digital Arts

EL600	Project					
Version	Campus	Term(s)	Level	Credit (ECTS)	Assessment	Convenor
1	Canterbury	Whole Year	H	45 (22.5)	100% Coursework	Lu Dr G
1	Canterbury	Whole Year	H	45 (22.5)	100% Project	Lu Dr G
1	Canterbury	Whole Year	H	45 (22.5)	82% Project, 18% Coursework	Lu Dr G
1	Canterbury	Whole Year	H	45 (22.5)	95% Exam, 5% Coursework	Lu Dr G
1	Canterbury	Whole Year	H	45 (22.5)	95% Project, 5% Coursework	Lu Dr G

Contact Hours

34 Contact Hours including lectures and weekly supervisions.
416 Independent Study Hours.
450 Total Study Hours

Department Checked

29/03/2018

Learning Outcomes

1. Execute a substantial piece of independent design or development engineering work
2. Write a scientific report based on the research, development and evaluation they have conducted
3. Formally present their work to individuals and groups

Method of Assessment

7% Background research, specification and initial design (To include project plan, budget, ethics, H&S and risk assessment)
7% Oral presentation
82% Final project report with a viva voce examination (one hour)
4% Poster presentation

Preliminary Reading

See <http://readinglists.kent.ac.uk>

Pre-requisites

None

Restrictions

None

Synopsis *

Introduction to the project, research techniques, poster design, report structure and writing.

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EL639		Video Games Development				
Version	Campus	Term(s)	Level	Credit (ECTS)	Assessment	Convenor
2	Canterbury	Autumn	H	15 (7.5)	100% Coursework	

Availability

Contact Hours

52 Contact hours
98 hour private study
Total student workload 150 hours

Department Checked

29/03/2018

Learning Outcomes

1. Demonstrate a thorough understanding of game design theory and creative practice in the field of computer game development
2. Understand and apply principles of computer game design workflow to the production of a game
3. Critically analyse technical and usability issues associated with games design and development.

Method of Assessment

(20%) Workshop exercises – mini game development
(60%) Video game design and development – a fully functioning game prototype
(20%) Video presentation – a short video on game design reflection

Preliminary Reading

See <http://readinglists.kent.ac.uk>

Pre-requisites

EENG3130 (EL313) – Introduction to Programming

Restrictions

None

Synopsis *

This module is concerned with a range of topics in video game design and development, including game physics, AI, level design, player behaviour, game rules and mechanics, as well as user interfaces. This module introduces students to game development using industry-standard software tools.

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EL667		Embedded Computer Systems				
Version	Campus	Term(s)	Level	Credit (ECTS)	Assessment	Convenor
1	Canterbury	Whole Year	H	15 (7.5)	65% Exam, 35% Coursework	Asimakopoulos Dr P

Availability

Contact Hours

Total contact hours: 25
Private study hours: 125
Total study hours: 150

Department Checked

06/08/2018

Learning Outcomes

1. Demonstrate an understanding of the design and operation of embedded systems;
2. Demonstrate an understanding of real time software and hardware system requirements;
3. Demonstrate practical experience of embedded systems based on case studies and laboratory experiments.

Method of Assessment

Examination 65%
Coursework 35%

Preliminary Reading

See <http://readinglists.kent.ac.uk>

Pre-requisites

COMP5270 (CO527) - OPERATING SYSTEMS AND ARCHITECTURE
EENG5600 (EL560) - MICROCOMPUTER ENGINEERING

Restrictions

None

Synopsis *****

This module introduces the theory and practice of employing computers as the control and organisational centre of an electronic or mechanical system, and examines issues related to time critical systems. It also provides exposure to practical embedded systems design through practical work, with one assignment exploring the ideas of real-time operating systems introduced in the lectures and a second using a microcomputer programmed in 'C' to control the ignition timing of a simulated petrol engine.

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EL677		Digital Communication Systems				
Version	Campus	Term(s)	Level	Credit (ECTS)	Assessment	Convenor
1	Canterbury	Whole Year	H	15 (7.5)	85% Exam, 15% Coursework	Gomes Prof N

Contact Hours

Total contact hours: 36
 Private study hours: 114
 Total study hours: 150

Department Checked

06/08/2018

Learning Outcomes

1. Demonstrate an understanding of information theory, error coding and its application in modern communication systems;
2. Demonstrate an understanding of communication network architectures and protocols.
3. Demonstrate an understanding of the principles of optical communication systems and their performance

Method of Assessment

Examination 85%
 Coursework 15%

Pre-requisites

EENG5700 (EL570) Communication Principles

Synopsis *

Information theory and Shannon capacity, information measure and mutual information, source coding and channel coding/decoding, multiuser communications.

Network architecture, topology. Access networks, voice and data. Transport networks and multiplexing. Local area networks, Ethernet, WiFi. TCP/IP networks and the Internet.

Optical communication systems. Propagation in optical fibres. Sources (LEDs, laser), modulation. Photodiodes, receivers. Optical components. System power budgets, noise and dispersion.

EL885		Research Methods and Project Design for Mobile Apps				
Version	Campus	Term(s)	Level	Credit (ECTS)	Assessment	Convenor
2	Canterbury	Spring	M	15 (7.5)	100% Coursework	
2	Canterbury	Whole Year	M	15 (7.5)	100% Coursework	

Contact Hours

Total contact hours: 20
 Private study hours: 130
 Total study hours: 150

Department Checked

14/11/2018

Learning Outcomes

- 1 Carry out a comprehensive literature survey on a selected topic using library and electronic information sources.
- 2 Identify the current status of a particular research area and define the state-of-art in that research area.
- 3 Identify and formulate further research, which could usefully be undertaken in a defined area of technology.
- 4 Plan a research project, including the definition of objectives, project management, experimental design and data collection and processing within time and resource constraints.
- 5 Undertake research using logical and effective methodologies.
- 6 Use common software packages for project management and presentation.
- 7 Communicate with peers by way of conference and journal publications.
- 8 Understand general issues concerning research including IPRs and research ethics.

Method of Assessment

Assignment (10%)
 Assignment (80%)
 Assignment (10%)

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Pre-requisites

None

Progression

Restrictions

None

Synopsis *

LITERATURE SURVEY

Surveys using networked electronic information sources, on-line databases, inter-library loan facilities, private communications, etc. Identification of a technical area worthy of research, definition of the state-of -the-art in a given field, definition of the research project, and research proposals. Patent search.

GENERAL ISSUES AND PRACTICE

Choosing the field of interest. Concept of originality. Research theories: background theory, focal theory, data theory. Contribution towards knowledge. Types of research project (blue sky, basic, applied and experimental research). Research uncertainty. Risk management. Research approaches.

RESEARCH PROJECT MANAGEMENT

Time management. Resources management. Project management software (MS Project). Use of logbooks. Data management. Data security. Team working skills.

RESEARCH PROCESS

MSc research projects. MPhil/PhD research projects. Academic research and industrial R&D. Project planning, proposals and budgeting. Design of experimental tests. Modelling and simulation.

RESEARCH PUBLICATIONS

Structure, content and procedures. Project reports and theses. Journal and conference papers. Technical presentations. Use of references. Writing up of abstract, introduction and conclusions. Submission, refereeing and amendments. Effective use of figures, drawings and tables. MS WORD, ENDNOTE and LATEX.

PRESENTATIONS OF RESEARCH RESULTS

Objectives and structure. Audience analysis. Rehearsal and delivery. Design of visual aids. Use of computerized projection facilities. Multi-media approach. Poster design and poster presentation. Handling questions.

INTELLECTUAL PROPERTY RIGHTS

Patents, patent rights and know-how. Copyright and copying. Design rights and registered designs. Research contracts and agreements. Confidentiality agreement.

RESEARCH ETHICS

Ethics in engineering research. Research supervision. Modelling and simulation versus real experimental work. Processing and presentation of experimental data. Obfuscation in writing up research papers.