Programme Specification (UG)

Awarding body / institution:	Queen Mary University of London
Teaching institution:	Queen Mary University of London
Name of final award and programme title:	BSc(Eng) Creative Computing
Name of interim award(s):	CertHE; DipHE; BSc(Eng)
Duration of study / period of registration:	3 years
QMUL programme code / UCAS code(s):	UBNF-QMELEC1/USCVC (I152)
QAA Benchmark Group:	Engineering
FHEQ Level of Award :	Level 6
Programme accredited by:	
Date Programme Specification approved:	
Responsible School / Institute:	School of Electronic Engineering & Computer Science

Schools / Institutes which will also be involved in teaching part of the programme:

School of Engineering & Materials Science

School of Languages, Linguistics & Film

Collaborative institution(s) / organisation(s) involved in delivering the programme:

Programme outline

This programme is intended to respond to a growing demand in the industry for graduates with a high level of training in creative multimedia production, multimedia social networks, computer-driven animation, multimedia scripting, interactive multimedia design, 3D graphics, web-based advertisement production, and management and planning of media assets. The programme aims to access a new population of better quality and better motivated undergraduate students by exploiting the unique competencies within EECS that shall be complemented by relevant courses from the Humanities and Social Studies faculty. The programme is designed to respond to the demand from the creative sector that requests for people who can combine technical and creative skills, as demonstrated from our experience with the industries linked with the MAT Doctoral Training Centre - http://www.mat.qmul.ac.uk/

The Creative Industries form some 7% of the UK economy, similar in size to the financial services industry, with export of services of nearly £15bn in 2005 (DCMS, Creative Industries Economic Estimates Statistical Bulletin, October 2007). During 1997-2005 they grew by 6%, double the overall UK economic growth, making them important not just to the UK Digital Economy, but to the UK economy as a whole. Yet the Creative Industries are unlike almost every other industry, with a small number of large players

complemented by a very large number of small businesses, micro-businesses, and individuals. Training students with the skills to maintain the UK's position as a world leader in the Creative Industries will be a particularly important challenge - which the Doctoral Training Centre in Media and Arts Technology addressed at graduate level. We want now to naturally complete our training provision with this undergraduate programme.

Aims of the programme

This programme covers fundamental aspects of the digital economy, creative multimedia production, computer-driven animation, multimedia scripting, interactive multimedia design, 3D graphics, web-based advertisement production, and management and planning of media assets. Graduates from this programme will effectively combine technical and creative skills. The programme aims to emphasise computer systems, digital installations and software with a special focus on new media creation; to provide a core knowledge of media production, multimedia system design; to focus on the increasingly important area of 3D graphics and computer-driven animation; to emphasise scripting and production aspects of media creation; to equip the students with the practical skills needed to modify and test a piece of software and hardware; to enable the students to develop the written and oral communication skills needed to present information, both in written and multimedia form, effectively.

The career opportunities for the graduates from this programme are in the (interactive) media production, music and game industry, internet, communications and consumer industries. The blending of technical courses with business and arts courses will equip the graduates with the skills that are necessary to understand and to contribute to the modern arts and media sectors of the digital economy.

What will you be expected to achieve?

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are referenced to the relevant QAA benchmark statement(s) (see above) and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008), and relate to the typical student. Additionally, the SEEC Credit Level Descriptors for Further and Higher Education 2003 and Queen Mary Statement of Graduate Attributes have been used as a guiding framework for curriculum design.

Please note that the following information is only applicable to students who commenced their Level 4 studies in 2017/18, or 2018/19

In each year of undergraduate study, students are required to study modules to the value of at least 10 credits, which align to one or more of the following themes:

- networking

- multi- and inter-disciplinarity

- international perspectives

- enterprising perspectives.

These modules will be identified through the Module Directory, and / or by your School or Institute as your studies progress.

Academic Content:

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A 1	Audio/Video data capture and processing, and an understanding of how these systems can be used creatively for audiovisual and computer-based content production
A 2	Principles of operation, limitations, potential and effective use of electronic media and their associated tools and technologies
A 3	Design, project and people management principles and techniques
A 4	Knowledge and understanding of essential facts,concepts,principles and theories relating to computing and computer applications as appropriate to the programme of study
A 5	The ability to deploy appropriate theory,practices and tools for the specification,design,implementation and evaluation of computer-based systems

Disciplinary Skills - able to:	
B 1	Analyse information and experiences, formulate independent judgements, and articulate reasoned arguments through reflection, review and evaluation
B 2	Source, navigate, select, retrieve, evaluate, manipulate and manage information from a variety of sources
B 3	Formulate reasoned responses to the critical judgements of others
B 4	Apply problem-solving skills, technical knowledge and understanding to create or adapt design solutions that are fit for purpose including operation, maintenance, reliability etc
B 5	The ability to specify, design or construct computer-based systems

Attributes:	
C 1	Work independently on a practical or research-based project under supervision
C 2	Work effectively as part of a team, identifying tasks and roles, and managing time, resources and progress appropriately
C 3	Apply technical knowledge, understanding and skills in new situations

How will you learn?

The teaching, learning and assessment strategies will be tailored to the learning outcomes of the different modules. These will include lectures, practical and library-based research, presentations, group work and knowledge transfer activities. Lectures are used to introduce principles and methods and also to illustrate how they can be applied in practice. Practical and library-based research allows students to develop skills in review, investigative methods and critical analysis. Presentations and group work enhance students' team-working and communication skills. Knowledge transfer activities increase students' awareness of the broader context of their discipline and supports them in translating their knowledge, understanding and skills to that broader context.

How will you be assessed?

Taught modules will be assessed through a combination of examinations (EXM), coursework (CWK), portfolio and performance (PRA), as appropriate for the content and focus of each individual module. Project modules (DIS) will be examined on the basis of a final written report, a formal oral presentation, and a demonstration of the software / hardware / installation developed by the

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student.

How is the programme structured?

Please specify the structure of the programme diets for all variants of the programme (e.g. full-time, part-time - if applicable). The description should be sufficiently detailed to fully define the structure of the diet.

The BSc(Eng) Creative Computing is a single programme with three pathways as electives: creative production pathway, design pathway and advanced programming pathway. The programme includes a number of modules that bridge the gap between creative arts and technology to cater to the current industrial demand. The BSc(Eng) Creative Computing will contain compulsory and elective modules as specified below.

Semester 1
ECS427U Professional and Research Practice (15 credits)
ECS404U Computer Systems and Networks (15 credits)
ECS405U Arts Application Programming (15 credits)
DEN126 Design Studio 30 credits)
Semester 2
ECS406U Bridging Arts & Technology (15 credits)
ECS416U Introduction to Multimedia (15 credits)
ECS417U Fundamentals of Web Technology (15 credits)
DEN126 Design Studio cont. (30 credits)

Semester 3
ECS511U Creating Interactive Objects (15 credits)
ECS521U Interactive Media Design and Production (15 credits)
ECS519U Database Systems (15 credits)
Select a stream from the following:
Students must follow the same stream over Semesters 3 and 4
Stream A (Technology):
ECS505U Software Engineering (15 credits)
Stream C (Film: Production):
ECS505U Software Engineering (15 credits)
Stream D (Design):
DEN212 Design Studio year 2 (30 credits)
Semester 4
ECS520U Group Creative Project (15 credits)
ECS512U Sound Design (15 credits)
Follow the stream selected in Semester 3:
Stream A (Technology):
ECS506U Software Engineering Project (15 credits)
ECS522U Graphical User Interfaces (15 credits)
Stream C (Film: Production):
FLM403 Production Skills (30 credits)
Stream D (Design):
ECS522U Graphical User Interfaces (15 credits)
DEN212 Design Studio year 2 cont. (30 credits)

Semester 5
ECS635U Project (30 credits)
Plus two from:
MAT307 Innovation Strategy (15 credits)
ECS607U Data Mining (15 credits)
ECS610U Computer Graphics (15 credits)
ECS614U Sound Recording and Production Techniques (15 credits)

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ECS638U Design for Human Interaction (15 credits)
ECS639U Web Programming (15 credits)
ECS657U Multi-platform Games Development (15 credits)
DEN327 Studio Practice Course Year 3 Group Design Project OR DEN329 Studio Practice Course Year 3 Individual Design Project
(30 credits, semesters 5&6) - Programme Co-Ordinator approval required
Semester 6
ECS635U Project cont. (30 credits)
ECS637U Digital Media and Social Networks (15 credits)
ECS661U User Experience Design (15 credits) -(Replacing ECS612U Interaction Design)
Plus two from:
EC622U Product Development (15 credits)
ECS605U Image Processing (15 credits)
ECS659U Neural Networks & Deep Learning (15 credits)
ECS647U Bayesian Decision and Risk Analysis (15 credits)
FLM6201 Creative Production (15 credits) - Programme Co-Ordinator approval required
DEN327 OR DEN329 Studio Practice Courses cont. (30 credits)

Academic Year of Study   FT - Year 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Professional and Research Practice	ECS427U	15	4	Compulsory	1	Semester 1
Bridging Arts & Technology	ECS406U	15	4	Compulsory	1	Semester 2
Arts Application Programming	ECS405U	15	4	Compulsory	1	Semester 1
Computer Systems and Networks	ECS404U	15	4	Compulsory	1	Semester 1
Design Studio	DEN126	30	4	Compulsory	1	Semesters 1 & 2
Introduction to Multimedia	ECS416U	15	4	Compulsory	1	Semester 2
Fundamentals of Web Technology	ECS417U	15	4	Compulsory	1	Semester 2

Academic Year of Study   FT - Year 2

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Creating Interactive Objects	ECS511U	15	5	Compulsory	2	Semester 1
Interactive Media Design & Production	ECS521U	15	5	Compulsory	2	Semester 1
Software Engineering	ECS505U	15	5	Elective	2	Semester 1
Design Studio Year 2	DEN212	30	5	Elective	2	Semesters 1 & 2
Sound Design	ECS512U	15	5	Compulsory	2	Semester 2
Software Engineering Project	ECS506U	15	5	Elective	2	Semester 2
Creative Group Project	ECS520U	15	5	Compulsory	2	Semester 2
Graphical User Interfaces	ECS522U	15	5	Elective	2	Semester 2
Production Skills	FLM403	30	4	Elective	2	Semester 2

Academic Year of Study   FT - Year 3

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Project	ECS635U	30	6	Compulsory	3	Semesters 1 & 2
Web Programming	ECS639U	15	6	Elective	3	Semester 1
Design for Human Interaction	ECS638U	15	6	Elective	3	Semester 1
Computer Graphics	ECS610U	15	6	Elective	3	Semester 1
Sound Recording & Production Techniques	ECS614U	15	6	Elective	3	Semester 1
Data Mining	ECS607U	15	6	Elective	3	Semester 1

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Innovation Strategy	MAT307	15	6	Elective	3	Semester 1
Multi-platform Games Development	ECS657U	15	6	Elective	3	Semester 1
Studio Practice Course Year 3 Group Design Project	DEN327	30	6	Elective	3	Semesters 1 & 2
Studio Practice Course Year 3 Individual Design Project	DEN329	30	6	Elective	3	Semesters 1 & 2
User Experience Design	ECS661U	15	6	Compulsory	3	Semester 2
Digital Media and Social Networks	ECS637U	15	6	Compulsory	3	Semester 2
Neural Networks & Deep Learning	ECS659U	15	6	Elective	3	Semester 2
Product Development	ECS622U	15	6	Elective	3	Semester 2
Image Processing	ECS605U	15	6	Elective	3	Semester 2
Bayesian Decision and Risk Analysis	ECS647U	15	6	Elective	3	Semester 2
Creative Production	FLM6201	15	6	Elective	3	Semester 2

What are the entry requirements?

A/AS-levels
Tariff/Grades requirement: AAB at A-Level. Alternatively, A-Level grades ABB including either A-Level Mathematics or Computer Science. GCSE Maths grade B/5 or above.

Access
We consider applications from students with the Access to Higher Education Diploma in Computing. The minimum academic requirement is to achieve 60 credits overall, with 45 credits at Level 3, of which 30 credits must be at Distinction and 15 credits at Merit or higher. Applications are considered on a case by case basis. Due to the high volume of applications, we do not make offers of study purely on the basis of meeting grade requirements. An additional entry Maths test will be required if you do not hold GCSE Mathematics at grade B.

International Baccalaureate
International Baccalaureate Diploma with a minimum of 34 points overall, including 6,6,5 from three Higher Level subjects. Alternatively, 32 points overall including 6,5,5 from three Higher Level subjects including Mathematics or Computer Science.

IELTS 6.0(Must incl 5.5 in all components)

How will the quality of the programme be managed and enhanced? How do we listen to and act on your feedback?

Programme Co-ordinator regularly reviews modules and discusses content with students and staff within QMUL and also with other institutions.

The Staff-Student Liaison Committee provides a formal means of communication and discussion between Schools and its students. The committee consists of student representatives from each year in the school/institute together with appropriate representation from staff within the school/institute. It is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. Staff-Student Liaison Committees meet regularly throughout the year.

Each school operates a Learning and Teaching Committee, or equivalent, which advises the School/Institute Director of Taught Programmes on all matters relating to the delivery of taught programmes at school level including monitoring the application of relevant QM policies and reviewing all proposals for module and programme approval and amendment before submission to Taught Programmes Board. Student views are incorporated in this Committee's work in a number of ways, such as through student membership, or consideration of student surveys.

All schools operate an Annual Programme Review of their taught undergraduate and postgraduate provision. The process is normally organised at a School-level basis with the Head of School, or equivalent, responsible for the completion of the school's Annual Programme Reviews. Schools/institutes are required to produce a separate Annual Programme Review for undergraduate programmes and for postgraduate taught programmes using the relevant Undergraduate or Postgraduate Annual Programme Review pro-forma. Students' views are considered in this process through analysis of the NSS and module evaluations.

What academic support is available?

Each student is allocated a personal tutor/advisor in their first year and the tutor remains with them until they complete their programme.

How inclusive is the programme for all students, including those with disabilities?

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning difficulties and mental health issues. The DDS supports all Queen Mary students: full-time, part-time, undergraduate, postgraduate, UK and international at all campuses and all sites.

Students can access advice, guidance and support in the following areas:
• Finding out if you have a specific learning difficulty like dyslexia
• Applying for funding through the Disabled Students' Allowance (DSA)
• Arranging DSA assessments of need
• Special arrangements in examinations
• Accessing loaned equipment (e.g. digital recorders)
• Specialist one-to-one "study skills" tuition
• Ensuring access to course materials in alternative formats (e.g. Braille)
• Providing educational support workers (e.g. note-takers, readers, library assistants)
• Mentoring support for students with mental health issues and conditions on the autistic spectrum.

Programme-specific rules and facts

n/a

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Links with employers, placement opportunities and transferable skills

The School of Electronic Engineering & Computer Science has a wide range of industrial contacts secured through research projects and consultancy, our Industrial Experience programme and our Industrial Board.

The Industry Panel works to ensure that our courses are state of the art and match the changing requirements of this fast moving industry. The Panel includes representatives from a variety of Electronic Engineering & Computer Science orientated companies ranging from SMEs to major blue-chips. These include: Microsoft Research, Royal Bank of Scotland, BT Labs, Oaklodge Consultancy, Intel Research, The Usability Company, Hewlett Packard Labs and Arclight Media Technology Limited

The career opportunities for the graduates from this programme are in the (interactive) media production, music industry, gaming, internet, communications and consumer industries. The blending of technical courses with business and arts courses will equip the graduates with the skills that are necessary to understand and to contribute to the modern arts and media sectors of the digital economy.

Programme Specification Approval

Person completing Programme Specification:

Dr Karen Shoop (Programme Coordinator)

Person responsible for management of programme:

Dr Karen Shoop (Programme Coordinator)

Date Programme Specification produced / amended by School / Institute Learning and Teaching Committee:

24 November 2021

Date Programme Specification approved by Taught Programmes Board:

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