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University of London

Programme Specification (PG)

Awarding body / institution:	Queen Mary University of London
Teaching institution:	Queen Mary University of London
Name of final award and programme title:	MSc in Media and Arts Technology by Research
Name of interim award(s):	N/A
Duration of study / period of registration:	1 year
QMUL programme code(s):	PMSF-QMCOMP1
QAA Benchmark Group:	Not applicable
FHEQ Level of Award:	Level 7
Programme accredited by:	Not applicable
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 English & Drama

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

Programme outline

The MSc in Media and Arts Technology by Research will train students to become skilled researchers and practitioners at the intersection of science, technology, digital media and the arts. The programme builds on the outstanding success of Queen Mary's Media and Arts Technology (MAT) Centre for Doctoral Training. It addresses all three of EPSRC's Digital Economy themes, particularly Digitally Connected Citizens and many ICT themes, especially Next Generation Interaction Technologies, Data to Knowledge and ICT for Manufacturing; Digital Healthcare.

The taught modules train students in the technologies and techniques used in interdisciplinary research in Media and Arts Technologies. The Advanced Research Project module draws together the knowledge and skills from the taught component to address a research challenge of significant scope to be undertaken independently, under supervision.

Aims of the programme

The programme aims to:
- Prepare students for interdisciplinary research that combines advanced methodological, technical, and creative skills
- Expose students to the research environment and practices, and the current state-of-the-art innovation in technologies for Media and Arts in the creative sector

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- Develop critical, analytic, and presentational skills
- Ensure the production of an original MSc research project dissertation
- Produce graduates with interdisciplinary skills who can contribute to the Creative Economy

What will you be expected to achieve?

Learning outcomes:
- A clear understanding of the full research cycle from framing a question through to communication of results
- Ability to critically assess a range of research methods ranging from qualitative through to experimental research
- Enhanced technical knowledge in an area relevant to their research
- Critical appreciation of the technical and creative state-of-the-art in contemporary applications of digital media
- Experience of extended critical and analytic writing through dissertation on the research project

Academic Content:	
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, and ability to innovate and make research contributions in this area
A 2	Principles of operation, limitations, potential and effective use of electronic media and their associated tools and technologies, and ability to innovate and make research contributions in this area
A 3	A clear understanding and application of the full research cycle from framing a question through to communication of results

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, and make contributions to such sources
B 3	Critically assess and apply a range of research methods ranging from qualitative through experimental to practice-based research
B 4	Carry out extended critical and analytic writing through a dissertation on their research project
B 5	Analyse complex, novel and diverse situations, and identify and innovate appropriate methods of working and communicating

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

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C3	Design, plan, manage, implement, evaluate and report a significant individual project in electronic media design and technology
C4	Make effective use of enabling computer technologies for post production and compositing
C5	Apply technical knowledge, understanding and skills in new situations

How will you learn?

The taught modules are delivered through a mixture of lectures, seminars and laboratory/studio work. Students will also take advantage of expertise across the college and within the partner organisations providing guest lectures, master classes and, where appropriate, formal and informal evaluation of project work. The advanced research project is an individual project undertaken under the supervision of an academic.

The course is full time for one year.

How will you be assessed?

The combination and range of teaching, learning and assessment strategies are designed to ensure that students from a wide range of disciplinary backgrounds are able to take advantage of each other's experience and achieve a broadly equivalent high level of critical, theoretical and practical skills. Assessment of all learning objectives is done in each module through coursework, exams, projects, practical work, presentations and reports. Assessment in the research project is done by submitted report and viva presentation.

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 programme is structured as follows:

90 credits of taught modules, and 90 credits of research project

The taught modules give each cohort a common grounding in core technical and creative skills and ensure that each student develops enhanced skills through specialist options. We make extensive use of studio-based projects with a variety of technical media, encourage a "maker" culture and integrate public presentation into coursework assessments. Programming is taught as a fundamentally creative process and we underline the importance of understanding arts practice to successful technical work. Students take three compulsory modules, three elective modules, and a core advanced research project.

Compulsory modules are listed below:
* Interactive Digital Multimedia Techniques ("IDMT"; ECS742P) covers physical computing (sensors and microcontrollers) and creative audio/video programming with a focus on creating interactive systems. This provides the foundation for specialist programming options and advanced physical design practices and techniques modules from SEMS. Several IDMT coursework projects have subsequently been accepted at major international conferences like ACM CHI.
* Sound Recording and Production Techniques ("SRPT"; ECS749P) covers core principles of digital audio and practical techniques in microphones, mixing desks and audio post-production. By learning how content is created, students are also better able to

understand how best to analyse it.
* Interactive System Design (ECS733P) covers design and evaluations of users interfaces and complements well the IDMT module.

The core module is listed below:
* MSc Advanced Research Project (Old code: ECS755P) is a five-month research project with an academic supervisor. The project provides an opportunity to put to practice the research skills learnt in the taught modules. As with other EECS Masters projects, the project is assessed by dissertation and viva.

Elective modules can be chosen between a range of preselected Level 7 elective modules based on module prerequisites. Examples of elective modules are listed below:

Semester 1:
* Software & Network Services Design (ECS705P) covers an introduction to programming for novice programmers.
* Design for Human Interaction (ECS712P) is a research-led module which explores the effectiveness of the design of new technologies by introducing psychological theories of the nature of human communication and socio-historical perspectives on the development and impact of communication technologies.
* Research Methods and Responsible Innovation (Old code: ECS719P) teaches the high-level research and transferable skills applicable to pure and applied research in computer science. It will also prepare students for employment or further academic study by enabling them to apply these in relevant, practical contexts.

Semester 2:
* Artificial Intelligence (ECS759P) provides an overview of techniques used in Artificial Intelligence including agent modelling, problem formulation, search, logic, probability and machine learning.
* Digital Audio Effects (ECS730P) covers the entire field of digital audio effects, including some depth in the subfields and related subjects. It is concerned with the use of digital signal processing and its applications to the creation or modification of sounds and sound effects.
* Music and Audio Programming (Old code: ECS732P) introduces a broad class of principles of programming music and audio systems, with a particular focus on real-time digital signal processing on embedded hardware. Students will develop audio projects using the Bela embedded hardware platform.
* Robotics (DENM011) introduces robotics as an integral part of modern automation, provides an introductory insight into the engineering design and application of robot manipulator systems. It also provides an understanding of kinematics, dynamics and trajectory planning of robotic manipulators, actuators and sensors, principles and roles in robotics.
* Business Technology Strategy (ECS728P) is focused on strategic management of research and development and how technology strategy drives the commercial strategy of innovative technology-based organisations.

Academic Year of Study   FT - Year 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Interactive Digital Multimedia Techniques	ECS742P	15	7	Compulsory	1	Semester 1
Sound Recording and Production Techniques	ECS749P	15	7	Compulsory	1	Semester 1
Research Methods and Responsible Innovation	ECS7007P	15	7	Elective	1	Semester 1
21st Century Networks	ECS703P	15	7	Elective	1	Semester 1
Software and Network Services Design	ECS705P	15	7	Elective	1	Semester 1

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Machine Learning	ECS708P	15	7	Elective	1	Semester 1
Introduction to Computer Vision	ECS709P	15	7	Elective	1	Semester 1
Design for Human Interaction	ECS712P	15	7	Elective	1	Semester 1
Computer Graphics	ECS762P	15	7	Elective	1	Semester 1
Computer Programming	ECS780P	15	7	Elective	1	Semester 1
Introduction to Object-Oriented Programming	ECS793P	15	7	Elective	1	Semester 1
Interactive System Design	ECS733P	15	7	Compulsory	1	Semester 2
MSc Advanced Research Project	ECS7500P	90	7	Core	1	Semesters 2 & 3
Business Technology Strategy	ECS728P	15	7	Elective	1	Semester 2
Digital Audio Effects	ECS730P	15	7	Elective	1	Semester 2
Music Informatics	Old code: ECS731P	15	7	Elective	1	Semester 2
Music and Audio Programming	Old code: ECS732P	15	7	Elective	1	Semester 2
Graphical User Interfaces	ECS744P	15	7	Elective	1	Semester 2
Digital Arts Documentary	ECS748P	15	7	Elective	1	Semester 2
Digital Media and Social Networks	ECS757P	15	7	Elective	1	Semester 2
Artificial Intelligence	ECS759P	15	7	Elective	1	Semester 2
Music and Speech Modelling	ECS792P	15	7	Elective	1	Semester 2
Music Perception and Cognition	ECS741P	15	7	Elective	1	Semester 2

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Robotics	DENM011	15	7	Elective	1	Semester 2

What are the entry requirements?

This is a highly interdisciplinary programme and we welcome applications from a range of backgrounds. What we require is some clear evidence of both technical and creative abilities. We invite new applications from outstanding individuals with any Arts, Engineering or Science background and welcome applications from people with a strong background in the visual arts, design, architecture, new media, user experience, human-computer interaction, and from people with a strong background in social science e.g. psychology, sociology, or a similar discipline. You will be able to develop additional skills through the selection of specialist options.
You should be able to demonstrate academic achievement at the level of a first class honours degree or high level pass at Masters and excellent critical and analytic skills. You should also have a clear aptitude for interdisciplinary research including some programming or mathematical ability.

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

The programme will be managed and reviewed by the relevant EECS Teaching Group.

The Student-Staff Liaison Committee provides a formal means of communication and discussion between the School and its students. The committee consists of student representatives from each cohort, together with appropriate representation from School staff. It is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. Student-Staff Liaison Committees meet four times a year, twice in each teaching semester.

Each semester, students are invited to complete a web-based module questionnaire for each of their taught modules, and the results are fed back through the SSLC meetings. The results are also made available on the student intranet, as are the minutes of the SSLC meetings. Any actions necessary are taken forward by the relevant Senior Tutor, who chairs the SSLC, and general issues are discussed and actioned through the School's Learning and Teaching Committee.

The School's Learning and Teaching Committee advises the 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, including through student membership and consideration of student surveys and module questionnaires.

The School participates in the College's Annual Programme Review process, which supports strategic planning and operational issues for all undergraduate and taught postgraduate programmes. The APR includes consideration of the School's Taught Programmes Action Plan, which records progress on learning and teaching related actions on a rolling basis. Students' views are considered in the APR process through analysis of the NSS and module questionnaires, among other data.

What academic support is available?

A programme induction will be held in the first week of a student's attendance at QMUL. Students will be given information on the course, health and safety arrangements, and be introduced to the course administrator. Students elect a representative who is a member of the regular EECS SSLC meetings. Students can provide anonymous feedback on modules through the QMplus system.

Programme-specific rules and facts

Specific support for disabled students

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

Links with employers, placement opportunities and transferable skills

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

The Industrial Advisory Board works to ensure that our courses are state of the art and match the changing requirements of this fast moving industry. The Board 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 technical 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:	Mathieu Barthet
Person responsible for management of programme:	Mathieu Barthet
Date Programme Specification produced / amended by School / Institute Learning and Teaching Committee:	14 Dec 2018
Date Programme Specification approved by Taught Programmes Board:	

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