Plymouth University
Faculty of Arts & Humanities
School of Humanities and Performing Arts

Programme Specification

Master of Research (M.Res)
Computer Music

Informal Faculty Review: 24 July 2008
Approval Event: 04 February 2009
Final Revision (post-approval): 05 March 2009, amended March 2011
First intake: September 2009
First award: November 2010

Amended: November 2013

Approved by Minor Change 12/11/2014

Programme Manager: Prof Eduardo Miranda

Programme specification:

Final Award title   M.Res Computer Music
- for students who achieve 180 level 7 credits

Intermediate Award title(s)   PGCert Computer Music Research
- for students who achieve 60 level 7 credits from within this programme

Awarding Institution   University of Plymouth
Teaching Institution   University of Plymouth

Date of production   07 May 2008 (first draft for informal review)
03 Dec 2008 (course validation version)
06 March 2009 (final version after recommendations of validation panel)
Updated March 2011 following permitted changes
Updated November 2013 following permitted changes

Date of approval   25th March 2009

Brief description of the programme

This full-time masters level programme in Computer Music studies provides an exciting opportunity for students to pursue an individual research project of their choice.

The computer is becoming increasingly ubiquitous in all aspects of music. Smart sound design and synthetic music pervades a wide range of creative practices, from avant-garde contemporary music to entertainment media for mass consumption. Computer technologies are having a profound impact on how music is studied, composed, performed, listened, stored and distributed. For instance, whereas software sound synthesis techniques offer musicians the possibility of creating bespoke digital musical instruments capable of producing an unprecedented range of novel sounds, Artificial Intelligence techniques allow for the design of sophisticated composition methods that would have been impossible to conceive otherwise.

The future relationship between technology and the people who make music happen is pivotal. More and more graduates from music degrees are realizing that a relationship with computer applications and music, and a Masters-level qualification make them more employable. This Masters-level programme provides an exciting opportunity for students to catch up with the latest developments at the crossroads of music and computing technology and pursue an individual research project of their choice.

The M.Res Computer Music is delivered within the context of the Interdisciplinary

Centre for Computer Music Research (ICCMR), which is supported by staff from different departments across the University, including accomplished musicians who also hold PhDs in Music, Music Technology, Physics, Computer Science, Engineering and Bioinformatics. ICCMR underpins this programme with an impressive research activity of international significance, with over 100 peer reviewed research papers published within the last 5 years, books and music on CDs. In addition to being interdisciplinary, ICCMR is a truly international centre, with staff, PhD students and post-doctoral researchers from all over the world, including Belgium, Brazil, Canada, China, France, Germany, Greece, Holland, Ireland, Israel, Italy, Malaysia, Poland, Portugal, Spain, and of course, the UK.

The final M.Res dissertation may be in the form of written theoretical work, technological development accompanied with a written report, or a music portfolio with contextual commentary. Projects may focus on – but not limited to: a) the development of new composition and performance practices using computers, b) music perception and understanding how music is processed in the brain (c) computer-aided musicology (e.g., music analysis), d) the development of new technologies for composition and sound design and e) assistive music technology for pedagogical, therapeutic and recreational opportunities. The final M.Res dissertation is between 8,000-10,000 words long.

M.Res Computer Music students have the opportunity to continue their practice and develop their repertoire by participating in performances at the University. Ensembles include the 170 voice University of Plymouth Choral Society - a community choir that also actively encourages membership from students and staff. The University Orchestra of around 75 players is predominantly students. Additionally, the University hosts the annual Peninsula Arts Contemporary Music Festival, which is one of the UK's most innovative new festivals of contemporary music presenting performances and premieres by internationally acclaimed composers and performers as well as providing the platform for the University of Plymouth music research emerging from ICCMR and new music from academics and students.

Distinctive features

The M.Res in Computer Music programme offers:

1. A means for those who do not wish to take a strictly taught MA or MSc to pursue a specific research project in computer music at masters level

2. A means for highly motivated students who have limited opportunities to be on campus (due to distance or other commitments) to undertake a rigorous research-based masters programme in part-time mode

3. Research training conveying the skills necessary to progress to more advanced research towards a PhD

4. The opportunity to work in an environment that equally values practice-led and more standard methods of research and their expression

5. The opportunity to join a vibrant community of doctoral students, researchers and practitioners from different nationalities and background working within ICCMR. People from all over the world have chosen to study and work at ICCMR, including Belgium, Brazil, Canada, China, France, Germany, Greece, Holland, Ireland, Israel, Italy, Malaysia, Poland, Portugal, Spain and the UK

6. Teaching supported by ICCMR research seminars on current trends in contemporary music and technology. The seminars are delivered by both ICCMR members and/or associates and invited external speakers. Past speakers included: Jørgen Mortensen (West Jutland Academy of Music, Denmark), Arne Eigenfeldt (Simon Fraser University, Canada), Lali Krotoszynski (Unicamp, Brazil), Tim Blackwell (Goldsmiths College, UK), Mark Plumbley (Queen Mary University of London, UK) and Ian Pace (Dartington College of Arts, UK), to cite but six.

7. Tuition and project supervision by qualified staff of national and international reputation in their respective fields, including Prof Eduardo Miranda (electroacoustic music, algorithmic composition, sound synthesis and assistive music technology), Dr John Matthias (acoustics, sound engineering, computer modelling, composition and sonic installations), Dr Torsten Anders (music theory, music programming languages and computer-aided composition), Mr Sam Richards (open form composition, improvisation, jazz, popular music and music sociology) and Dr Anna Troisi (new musical interfaces, interactive music systems and electronica)

8. Extensive opportunities for interdisciplinary research and practice in new facilities on a city centre university campus, including various performance venues performance venues in the University: Jill Craigie Cinema, Roland Levinsky Building Crosspoint and Roland Levinsky Theatre I (which has a grand piano) and Sherwell Centre (also with a grand piano)

9. The opportunity to engage in the annual Peninsula Arts Contemporary Music Festival, which provides an unparalleled opportunity in the South West of England to experience the most recent developments in new music and showcase their own work

10. The opportunity to join the University Orchestra and University Choral Society. Public concerts are performed throughout the year

Although it is always desirable for full-time students to engage solely on their programme of study, the contact hours for this programme make it possible for people to work part-time during the course.

The taught components will be scheduled to take place every other week, on the same day of the week (e.g., every other Thursday) in Term 1 and Term 2 (from October to Easter holiday). The final project will be developed through the whole year.

Entry requirements

Applicants should hold, or be in the process of gaining, an upper second (2:1) or first class degree in Music, Music Technology, Computer Music, Music Informatics, Audio Engineering, Music Production, or equivalent. (Names of courses combining music & technology vary enormously from institution to institution.)

An upper second (2:1) or first class Honours degree, or equivalent, combining Music with fields such as Digital Arts, Computing, Computer Games, Engineering and Physics (e.g., BA/BSc Digital Music & Computer Games Design, BA/BSc Music Multimedia and Electronics, BSc/BEng Electrical/Electronic Engineering with Music, etc.) are also acceptable.

In exceptional circumstances graduates from other areas with proven background in music and or music technology are welcome to apply. Such graduates are advised to enquire the Faculty of Arts (address given below) prior to making an application.

A degree of a comparable standard from a University or recognized degree awarding body in another country is acceptable.

In exceptional circumstances candidates who do not hold a first degree compatible with the UK system, but possess significant practical experience may qualify for entry. Please enquire. Also, candidates may be considered under APEL/APCL provisions. All exceptional cases will be considered on an individual basis and will relate explicitly to specific module learning outcomes when appropriate.

Students for whom English is not their first language must have proficiency in written and spoken English. Normally applicants should attain minimum test scores of 6.5 for IELTS (International English Language Testing Scheme), or the equivalent. However candidates must understand that, given the nature of the programme, students will be expected to read and engage with complex theoretical texts and debates for which fluency in English is essential.

Target Students:

The target audience covers a broad spectrum of interests in the domain of music with technology and/or science. This programme should appeal to the following potential applicants for the following reasons:

A) Practising musicians:
It provides a platform to explore systematically ways in which cutting edge computing technology may enhance their practice. This category includes composers wishing to look into the possibilities of computer-aided composition or computer-aided sound design, and performers wishing to explore the potential of performance with live electronics.

B) Music graduates, musicologists and music educators:
It gives the opportunity to pursue a research project involving computing

technologies to complement their skills, while enhancing their career with a post-graduate academic qualification. For example, this category may include a music graduate interested in learning a music programming language to complement skills not covered in a traditional BA (Hons) Music degree.

C) Music technologists, sound engineers and software developers:
It provides the opportunity to gain a better understanding of the needs of musicians and the music industry, in the context of a research project, whose outcome can may be a technological development. For instance, a computer game developer wishing to investigate the possibilities of computer-generated music.

D) Graduates from other areas, but with proven knowledge of music and/or music technology:
The course enables graduates from other areas to explore ways in which they may combine their background and their passion for music academically and professionally. This category may include a physicist interested in exploring concepts from modern physics to design new music synthesizers; or a psychologist interested in developing computational models to study music perception, creativity, etc.

Programme aims

The M.Res Computer Music shares common aims with all M.Res programmes in the School of Humanities and Performing Arts. These assume that the rigours of subject-specificity (aims 1 ,6, 7, 8, 9 below) will be addressed and developed through the subject-specific taught modules as well as the student's own programme of work. The common aims are as follows:

1. To introduce students to, and develop their application of, critical theories and approaches relevant to the area of study

2. To offer students grounding in research methods and skills in the arts, humanities, creative and cultural industries, and related fields

3. To develop the skills and understandings necessary to pursue a career in research

4. To prepare graduates for MPhil/PhD programmes, at the University of Plymouth or elsewhere

5. To enable and facilitate the planning and completion of defined research projects in the arts, humanities, cultural industries and/or related fields within a specified timeframe

In addition to the common aims listed above, the M.Res Computer Music has the following specific aims:

6. To provide a platform for practising musicians to explore systematically ways in which cutting edge computing technology may enhance their

practice; for instance, composers wishing to look into the possibilities of computer-aided composition or computer-aided sound design

7. To give music graduates, musicologists and music educators the opportunity to pursue a research project involving computing technologies to complement their skills, while enhancing their career with a post-graduate academic qualification

8. To enable graduates from the sciences and engineering (e.g., psychology, neuroscience, physics, electronics, etc.) to explore ways in which they may combine their scientific background and their passion for music academically and professionally

9. To expose qualified technicians, sound engineers and software developers to contemporary trends in music practice and research with a view on gaining a better understanding of the needs of musicians and the music industry

Research skills, writing skills, presentation skills and IT skills are fostered through the programme, equipping students for a range of graduate-level careers:

- **Careers in Research**: The M.Res Computer Music qualification may lead to meeting the requirements to enroll on a doctoral programme (e.g., PhD) in the field at the University of Plymouth or elsewhere

- **Careers in Music Industry**: The qualification may lead to employment in a wide range of opportunities in the music & media technologies industry, including computer games, film, animation, television and radio

- **Careers in Education**: The knowledge gained through the M.Res is also relevant to pursuing a career in secondary education, tertiary education and community education

- **Career enhancement**: For those professionals already in employment or self-employment, the M.Res may open new opportunities for promotion or career change.

Intended learning outcomes

Upon completion students will be able to:

1. Negotiate a programme of study at master's level, focusing on the reflective development of their own research practice

2. Summarise, document, report and reflect on research progress and findings through appropriate modes of communication

3. Establish originality, innovation and creative independence in the realisation and evaluation of their own research

4. Hone their IT for music skills

5. Upon successful completion of M.Res in Computer Music, students will demonstrate knowledge and understanding of appropriate research methods, technologies and their application to computer music as a field of study

Link to subject benchmark(s)

There are currently no QAA M-level benchmarks for Computer Music, or any Arts & Humanities subjects:

http://www.qaa.ac.uk/academicinfrastructure/benchmark/masters/MlevelEventfeb2006.asp

It is assumed that students will continue to develop, refine and apply the skills gained at Honours degree level in related subjects. See for instance QAA Honours Subject Benchmark statements for Music and Computing:

http://www.qaa.ac.uk/academicinfrastructure/benchmark/honours/music.asp

http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/computing07.asp)

Assessment Modes

Assessment will take via the following tasks:

1. Extended project proposal (including outline of aims, research questions, contextual research background, description of method and methodology); indicative reading list; statement of ethical research (if working with human participants); schedule of work/GANTT chart (MARE 700)

2. Research methodology portfolio, which includes specified entries and tasks (MARE 700)

3. Work-in-progress research presentation; oral presentations, sample chapters, performance presentation, exhibitions, portfolio submission, etc. (all modules)

4. Review of sources/literature review, small scale research project, contextual essay, and/or any other negotiated tasks dependent on project (MARE 702 and MARE701)

5. A research paper following the guidelines of a learned journal in the field (students will be encouraged to submit the paper for publication, but publication is not a criterion for assessment) (MARE 702)

6. Written master dissertation of between 12000 and 25,000 words. The dissertation may be accompanied by a technological development (e.g., a piece of software) and/or a music portfolio (e.g., compositions or recording

of performances on CD or DVD) (MARE701)

7. Development of a technical project to be defined by the module leader. A typical project may involve the implementation of a generative music system, a sound synthesis system, or a new musical interface for live performance, to cite but three examples (MARE 702)

8. A negotiated short practical project for MARE 702, which may be developed individually or in groups

Students will receive formative feedback on each of the assessed tasks leading to the submission of the thesis.

Teaching, Learning and Assessment

The programme comprises three modules focusing on the following:

1) **Research in the Arts & Humanities** (MARE 700) – 30 credits
   - module is compulsory for all MRes students in the School of Humanities and Performing Arts and ResM students in the Arts & Humanities DTC
   - the delivery takes place over two terms (1 and 2) in a variety of ways:
     i. One-to-one research tutorials with the student's project supervisor
     ii. Participation in research seminar groups. Although students will be expected to attend a nominated research seminar series, they are also encouraged to attend others of interest
     iii. Skills training and research methods workshops run by the Doctoral Training Centre in the Arts & Humanities, in conjunction (when appropriate) with ILS. Most elements of these workshops are also open to MPhil/PhD students in the DTC
   - the latter is supported through the use of the 'student portal' pages for this module
   - assessment is via Research Methodology Portfolio, and Work-in-Progress Research Presentation to a 'live' audience

2) **Masters Thesis in the Humanities &/or Performing Arts** (MARE701) – 120 credits
   - assessed via Project Proposal and thesis on a negotiated topic (EITHER written text OR writing plus other form of critical/creative practice that responds to a defined research enquiry) AND *viva*.
   - taught via one-on-one supervision.
   - students encouraged to attend seminar groups and training opportunities in term 3 (and in year 2 for part-time students)
   - module is compulsory for all MRes students in the School of Humanites & Performing Arts.

3) **MARE 702: Advanced Topics in Computer Music Research (30 credits):**

- Delivered via the module leader and associated supporting staff, who may or may not include the Programme Manager
- Delivered over two terms (1 and 2)
- Students may be given the opportunity to sit in complementary modules (at the discretion of the Programme Manager and respective module leaders)
- Focus is on enabling the student to gain discipline-specific skills, understanding current debates, technologies and practices within the field of study
- Assessment comprises: A) development of a technical project to be defined by the module leader. A typical project may involve the implementation of a generative music system, a sound synthesis system, or a new musical interface for live performance, to cite but three examples (30%); (B) a paper analyzing the work of a representative composer or practitioner of electronic/computer music, to be defined by the module leader (30%); (C) a negotiated practical project, which may be developed individually or in groups (40%)

Contact Hours/Attendance Requirements

The scheme below is indicative of required student commitment as well as the overall teaching and learning strategy for the programme. The scheme might need to be adapted from year to year to accommodate resource and timetabling factors.

- **MARE 702 - Advanced Topics in Computer Music Research**: Intensive 2 hours-long sections (including lectures, practical work and student-led workshops) twice a month in terms 1 and 2 (totaling 12 sessions from October to Easter holiday). Each session will be held on the same weekday at the same time (e.g., Thursdays afternoon).

- **MARE 700 Research in the Arts & Humanities module**: 5 full days during the academic year. Exact dates will be announced at the beginning of the academic year.

- **Research Seminars**: ICCMR organizes a series of regular seminars, some of which are animated by an external guest speaker. Past speakers included: Jørgen Mortensen (West Jutland Academy of Music, Denmark), Arne Eigenfeldt (Simon Fraser University, Canada), Lali Krotoszynski (Unicamp, Brazil), Tim Blackwell (Goldsmiths College, UK), Mark Plumbley (Queen Mary University of London, UK) and Ian Pace (Dartington College of Arts, UK), The seminar are announced in ICCMR's website. These seminars last approximately 90 minutes. They normally take place on Thursdays (to coincide with the day of the MARE 702 sections), but this may vary in order to accommodate the availability of guest speaker.

- **Skills workshops**: These are run by the Graduate School or the DTC in the Arts & Humanities. Required attendance will depend on each student's own individual needs and aspirations. Students may attend as many or as few as they require

- **Tutorials with your supervisor for MARE701 project:** These tutorials are to be negotiated as convenient for both student and supervisors. Most supervisors will try to schedule the tutorials at times the students are on campus for other events. Students should be meeting with their supervisor at least every 2-3 weeks – and should be in contact in other ways (e.g., by e-mail) in between. If the MARE701 project is practice-led, then there will be additional requirements related to the presentation of the work as well as showing it to the supervisor and other audiences as work-in-progress.

- **Optional**: M.Res Computer Music students are also welcome to attend and/or participate in performance events, University Orchestra, University Choral Society, annual Peninsula Arts Contemporary Music Festival, department-wide workshops and symposia, as well as seminar series for other research groups. Also, it may be possible to attend modules from other Masters programmes in the University to supplement required skills (e.g., computer programming), at the discretion of the Programme Manager.

Assessment and Quality Assurance Strategies:

A carefully constructed balance of formative and summative assessments are deployed across this Programme. Wherever appropriate and possible informal feedback will be provided for ongoing projects and work in progress.

1) Research in the Arts & Humanities (MARE 700)
    a. There are two elements of assessment: a research methodology portfolio and a work-in-progress presentation.
    b. The *Research Methodology Proposal* is assessed by the MRes programme leader with at least 25% of assignments second marked by another internal examiner.
    c. The *Work in Progress Research Presentation* is assessed by the student's supervisor and at least one other internal examiner who negotiate and agree a final grade.
    d. Internal examiners may be the Programme Manager (if not the supervisor) or any other person within the University who is qualified to comment on the student's coursework through subject expertise.
    e. All student achievement is monitored and confirmed by the module leader.
    f. Student achievement is monitored by the MRes External Examiner who comments upon the standards of the module as a whole. S/he will see a negotiated sample of assessed work and

feedback (via video if necessary).

2) Masters Thesis in the Humanities and/or Performing Arts (MARE701)
   a. There are two assessed elements for this module: a project proposal and a thesis.
   b. The *Project Proposal* is assessed by the supervisor and another internal examiner on a pass/fail basis. This is negotiated between both examiners. Students must pass this task in order to pass the module but it carries no assessment weighting. If a student does not pass on first attempt, then s/he will be given at least one subsequent opportunity, following the receipt of feedback, within the module to pass this task if necessary.
   c. The examination of the thesis will be conducted by two internal examiners (blind marked first, followed by negotiated agreement)
   d. All student achievement is monitored and confirmed by the module leader.
   e. The MRes Arts External Examiner comments upon the standards of the module as a whole, having seen a negotiated sample of theses.

3) Advanced Topics in Computer Music Research (MARE 702)
   a. Assessed by the module leader and associated supporting staff when appropriate.
   b. Assessment in terms of i) technical skills (development of a technical practical project = 30%), ii) understanding of contemporary music trends (essay analyzing the work of a chosen representative composers or practitioners of electronic/computer music = 30%) and iii) practical project = 40%.
   c. Monitored by an appointed external examiner who will see a negotiated sample of coursework and who will comment on this module within both Programme Award Panels (via the M.Res External Examiner, if necessary).

Programme structure and pathways

Please refer to relevant pages on modules description below. Note that ALL modules are core modules and ALL are M-level.

Exemptions/ special academic regulations

In addition to offering M.Res awards 'with distinction', students within this programme will be offered the opportunity to achieve an M.Res award 'with merit'.

That is,
Students who achieve 180 credits may be eligible for the following named

awards:
- M.Res Computer Music
  - To be eligible for this award, students must gain 180 credits by passing all four modules, three core and one optional.

- M.Res Computer Music with Merit
  - To be eligible for this award, students must be awarded a Merit grade (i.e. between 60-69%) for MARE701 (120 credits) and pass all other modules (totalling 60 credits) at first attempt.

- M.Res Computer Music with Distinction
  - To be eligible for this award, students must be awarded a Distinction grade (i.e. over 70%) for MARE701 (120 credits) and pass all other modules (totalling 60 credits) at first attempt.

Notes about modules:

MARE 702 is a module created specifically for the M.Res Computer Music. Module leader is the programme manager, Prof E R Miranda.

MARE 700 and MARE701 are shared with all other M.Res programmes in the School of Humanities & Performing Arts. MARE 700 is shared with all ResM programmes in the Faculty of Arts & Humanities.

Transitional arrangements:

Students who are starting year two of the current part time MRes Computer Music in 2014-15, will complete the newly titled and coded thesis module, MARE701, rather than MARE 501 (which is in place for 2013-14). No other element of their programme will change.

Faculty of Arts: M.Res in Computer Music
Programme Structure Diagram

total 180 credits

Full time only (12 months)

term 1 (12 wk)   **term 2 (12 wk)**   **term 3 (6 wk)**   **summer**

Advanced Topics in Computer Music Research (MARE 702): 30 credits

Research in the Arts & Humanities (MARE 700): 30 credits

Masters Thesis in the Humanities and/or Performing Arts (MARE701): 120 credits
(taught via one on one supervision in subject area during term time)
submission in September

Aims & Learning Outcomes Matrix			
FREQ Level 7 descriptor	**Programme Aims**	**Programme Learning Outcomes**	**Relevant Module**
Masters degrees are awarded to students who have:			
demonstrated a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study, or area of professional practice	Aims 1,2,6,7,8&9	Outcome 4	MARE 702 MARE701
demonstrated a comprehensive understanding of techniques applicable to their own research or advanced scholarship	Aims 1,2,3,4,5,6,7,8&9	Outcomes 1&4	MARE 702 MARE 700 MARE701
demonstrated originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline	Aims 1,2,3,4,6,7,8&9	Outcomes 3&4	MARE701
demonstrated conceptual understanding that enables the student to evaluate critically current research and advanced scholarship in the discipline	Aims 1,3&4	Outcomes 3&4	MARE 702 MARE 700 MARE701
demonstrated conceptual understanding that enables the student to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses	Aims 1,2,3,4,6,7,8&9	Outcomes 3&4	MARE 702 MARE 700 MARE701
Typically, holders of the qualification will be able to:			
deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences	Aims 1,2,3,4&5	Outcomes 2,3&4	MARE 702 MARE 700 MARE701
demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level	Aim 5	Outcomes 1&3	MARE 702 MARE 700 MARE701

continue to advance their knowledge and understanding, and to develop new skills to a high level	Aims 3&4	Outcomes 1&3	MARE 702 MARE 700 MARE701
and will have the qualities and transferable skills necessary for employment requiring:			
the exercise of initiative and personal responsibility	Aims 3,5,6,7,8&9	Outcome 1	MARE 702 MARE 700 MARE701
decision-making in complex and unpredictable situations	Aims 3&5	Outcomes 1&3	MARE 700 MARE701
the independent learning ability required for continuing professional development	Aims 3,4&5	Outcomes 1&2	MARE 702 MARE 700 MARE701

PLYMOUTH UNIVERSITY MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: MARE 702   **MODULE TITLE:** Advanced Topics in Computer Music Research

CREDITS: 30   **FHEQ LEVEL:** 7   **JACS CODE:** X210

PRE-REQUISITES: none   **CO-REQUISITES:** none   **COMPENSATABLE:** No

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module explores advanced topics in the field of sound and music computing, and music technology in general, and offers an opportunity to expose the students to the research of the Interdisciplinary Centre for Computer Music Research (ICCMR). Students will be introduced to trends in music practices with new technologies and will have the opportunity to gain and/or hone their theoretical and technical skills through a negotiated project.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions]* **see Definitions of Elements and Components of Assessment regulations**					
E1 (Examination)	n/a	**C1** (Coursework)	100%	**P1** (Practical)	n/a
E2 (Clinical Examination)	n/a	**C2** (Coursework)	n/a		
T1 (Test)	n/a	**A1** (Generic assessment)	n/a		

SUBJECT ASSESSMENT PANEL Group to which module should be linked: MARE

Professional body minimum pass mark requirement: n/a

MODULE AIMS:

It is aimed at providing a platform for practicing musicians to explore systematically ways in which computing technology may enhance their practice and for sound/music engineers to gain a better understanding of musical trends and practices with technology. Students will be introduced to advanced topics in the field of sound and music computing and will have the opportunity to learn about the research developed at the Interdisciplinary Centre for Computer Music Research (ICCMR). The module will reflect the state of the art of research in the field, with focus on project developed within ICCMR. The module has been designed to support students with the content that they will need to negotiate and develop their research practice in other modules and final project. It will introduce contemporary trends in music with computing technology, including topics such as sonic arts, electroacoustic music, computer-aided musical creativity, new interfaces and devices for performance combining traditional musical instruments and electronics, and Artificial Intelligence applied to musical applications.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:

a) Demonstrate awareness of a range of technologies, practices and approaches to using new technologies and computers in music.

b) Produce competent practical, theoretical and/or technical research material.

c) Coherently organize and present conceptual ideas pertaining to the field.

DATE OF APPROVAL: 12/11/2014	**FACULTY/OFFICE:** Arts & Humanities
DATE OF IMPLEMENTATION: Sept 2015	**SCHOOL/PARTNER:** HPA
DATE(S) OF APPROVED CHANGE:	**SEMESTER: Semester 1**

PLYMOUTH UNIVERSITY MODULE RECORD

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications
  http://www.qaa.ac.uk/en/Publications/Documents/Framework-Higher-Education-Qualifications-08.pdf
- Subject benchmark statements
  http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx
- SEEC level descriptors http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010 (scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code
  http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx

PLYMOUTH UNIVERSITY MODULE RECORD

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. <u>Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students.</u> Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2015/2016   **NATIONAL COST CENTRE: 144**

MODULE LEADER: Prof Eduardo Miranda   **OTHER MODULE STAFF:**

Summary of Module Content

The module comprises three assessed components: (A) Technical, (B) Theoretical and (C) Practical. In "A" students will have the opportunity to learn to use and program music software, which may include either Max/MSP, PD, Csound or, Matlab, or a combination of these (to be negotiated in class). In "B" they will study the work of representative composers and/or practitioners of electronic/computer music, including (but not limited to) the work of J. Chowing, J. C. Risset, and I. Xenakis. In "C" students will develop work putting into practice the technology learned in "A" and the theoretical insights learned in "B". Group work will be encouraged, combining students from different backgrounds (e.g., a composer and a music technologist). Projects are negotiable. A typical project may involve the development of software or system for the composition of a new piece of music to be performed with live electronics, to cite but one possibility amongst many others.

Each module component will be assessed, as follows:
(A) <u>Technical </u>(30%): development of a technical project to be defined by the module leader. A typical project may involve the implementation of a generative music system, a sound synthesis system, or a new musical interface for live performance, to cite but three examples.
(B) <u>Theoretical </u>(30%): a paper analyzing the work of a representative composer or practitioner of electronic/computer music, to be defined by the module leader. It will be produced following the guidelines of a research journal (e.g., Organising Sound), as a mock submission for publication. (Between 4,000 and 5,000 words).
(C) <u>Practical </u>(40%): a negotiated practical project, which may be developed individually or in groups (of max 3 students per group). If developed in groups, the role of each member of the group and assessment criteria must be clearly defined with the module leader beforehand.

Through the above modes, students will be assessed on their ability to:

- Design, implement and document practical assignments: clarity of design, level of understating of the problem in question, and clarity of code/programming and documentation.
- Communicate coherently organized conceptual ideas related to the study of computer music.
- Write clearly and follow guidelines for production of research papers/reports (e.g., the journal publisher's guidelines for producing the assessed work for component "B")
- Articulate a clear understanding of a particular range of technical, theoretical and

methodological approaches to the tasks at hand.
- Act as independent, self-critical learners who are able to constructively reflect on their own research.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions}*		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Practical workshops on computer programming for music	100	
Lectures on history of computer music and current trends	50	
Group analysis of representative technical developments and/or musical compositions using technology & computer-generated methods	50	
Practical projects in class, either programming and/or theoretical.	50	
Workshops on honing presentation skills for conferences and techniques for writing up research papers.	50	
Total	**300**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)**

Category	*Element*	*Component Name*	*Component weighting*	*Comments Include links to learning objectives*
Written exam	E_		n/a	
	T_		n/a	
Coursework	C_	Essay 1	30%	All learning outcomes are assessed.
		Programming Task	30%	
		Project Report	40%	
Practice	P_		100%	

Updated by: Prof Eduardo Miranda Date: 01/08/2014	**Approved by**: Date: XX/XX/XXXX