University of Plymouth

Faculty of Arts, Humanities and Business

School of Society and Culture

Programme Specification

BSc (Hons) Computing, Audio, and Music Technology

Definitive Document Approved: 20.8.19

Implementation Date: September 2020

Amended by Minor Changes: 19.5.21

1.	**Final award title**	BSc (Hons) Computing, Audio, and Music Technology

Level 5 Intermediate award title(s)	Diploma of Higher Education
Level 4 Intermediate award title(s)	Certificate of Higher Education

UCAS code	J9l3
JACS code	J930 (75%), I320 (25%)
HECOS code	100222 (75%), 100956 (25%)

2.	**Awarding Institution:**	University of Plymouth
	Teaching institution(s):	University of Plymouth

3.   Accrediting body(ies)

This programme's documentation has been evaluated and accepted for initial accreditation by the Joint Audio Media Education Support (JAMES) body.

Date of re-accreditation
TBC

4.   Programme Overview

Technology drives the music industry and influences the way we consume, produce, and use audio. It enables us to create music on our laptop, have instant access to millions of songs via the internet, and communicate with our technology. It empowers us to develop devices that use sound to enrich and change the lives of those suffering from disabilities and illnesses. The industry's increasing reliance on technology is providing new jobs and changing what audio and music tech firms want from their employees. Today, employment in Audio and Music Technology spans far beyond recording studios and live concerts to the realms of software development, assistive technologies, and gaming. There is an increasing demand for music technologists who can use and maintain existing technologies and create new innovative tools that help shape the future of the industry. Graduates of this degree will be prepared for employment in the modern Audio and Music Technology sectors along with other domains in Computing and Engineering.

Year one provides students with a solid grounding in modern music technology. Learners will develop the fundamental technical skills required to work effectively and creatively with music and audio in the digital and acoustic domains. They will become familiar with the theory of sound and music, audio engineering applied to recording, mixing, mastering, and live sound, and computer programming. This curriculum is designed to provide students with the understanding and skills to use existing technologies while provoking curiosity around developing new tools for audio and music.

In year two, students will transition from using existing audio and music technologies to learning how to develop and deploy their own. They will engage with industry briefs and work as technical experts with musicians in the recording studio. Students will learn how to build their own digital instruments and software applications, how to make their own hardware and software interfaces, and about the latest research in Audio and Music Technology.

Year three allows students to focus on individual interests. They will plan and develop a project that explores an area of their choosing in the realms of Computing, Audio, and Music Technology. Alongside embarking on a substantial project, students will learn advanced skills in artificial intelligence, machine learning, and audio signal processing. Students will also explore how to deploy their skills in assistive music technology, creating devices that can change and enrich lives.

5.   Distinctive Features of the Programme and the Student Experience

Students entering the BSc (Hons) Computing, Audio, and Music Technology will benefit from:

1. A learn by doing teaching approach with assessments that simulate real-world scenarios.

2. An interdisciplinary programme that responds to the changing needs of employers in Audio and Music Technology.

3. Well-equipped audio recording studios, computer laboratories, and music rehearsal facilities with subject-specific support technicians.

4. A unique 'Assistive Music Technology' strand where students learn how to create assistive systems and devices for people with disabilities or the ageing population.

5. Learning from academics who have written field-defining texts that are used to teach the discipline in universities throughout the world.

6. A research-led teaching experience through the Interdisciplinary Centre for Computer Music Research (ICCMR), who are critical players both nationally and internationally in the Computer Music discipline. ICCMR was recognised as world-leading by the UK Government's last assessment (REF2014) of research quality.

7. A course that prepares students for a career in both the technology and creative industries.

8. A teaching ethos where students benefit from the passion-driven and creative thinking attributes associated with the arts while learning core science and engineering knowledge and skills.

9. Opportunities to pursue post-graduate studies within the ICCMR and to collaborate and mix with PhD and Master's students.

10. The Professional Opportunities Scheme, which is available only to students studying within the Music subject area. This service communicates work opportunities to students, provides a liaison with potential employers, and empowers learners to identify and secure career-positive placements. The scheme is tailored to individual student aspirations.

11. Opportunities to attend national and international field trips. Such trips include, but are not limited to, technology festivals, industry events, and conferences.

6.   Relevant QAA Subject Benchmark Group(s)

This programme aligns with the QAA Benchmark Statements for Music and Computing. Please refer to section 9 for a precise mapping of benchmark standards to programme intended learning outcomes.

7.   Programme Structure

Semester 1	Semester 2

Year 1:

Music Fundamentals, Acoustics, and Perception CAMT401 30 Credits	Introduction to Programming CAMT403 30 Credits
Creative System Design and Build CAMT402 30 Credits	Audio Engineering CAMT404 30 Credits

Year 2:

Programming, Interfaces, and Interaction CAMT503 30 Credits	Sound Synthesis, Sampling, and Design CAMT501 30 Credits
Studio Production CAMT504 30 Credits	The Research Paper CAMT502 30 Credits

Year 3:

Negotiated Project Proposal CAMT601 30 Credits	Negotiated Project Development CAMT603 30 Credits
Audio Signal Processing CAMT602 30 Credits	Artificial Intelligence and Creativity CAMT604 30 Credits

8.   Programme Aims

This programme aims to:

1. Form graduates with a solid interdisciplinary background combining robust technical skills with artistic creativity and who can both develop and use audio and music technologies;

2. Develop the professional knowledge and practical skills that are required to succeed and progress in the Professional Audio sector and related industries;

3. Develop students' ability to discriminate between subjective and objective quantities of sound to inform working practices and effectively collaborate with musicians and non-experts;

4. Equip students with the necessary programming skills to develop creative, expressive, and uniquely engineered music and audio systems;

5. Introduce students to relevant critical and wider contexts surrounding contemporary practices in Music Technology;

6. Foster curiosity around the use and design of technology in expressive music performance and creation;

7. To encourage and support students while they develop and apply subject-specific and generic skills that will facilitate life-long learning and continuing professional development;

8. Support students in developing independent research skills, self-reflection techniques, and practical confidence;

9. Deliver a research-led educational experience where students learn from discipline leaders and curricula is kept at the frontiers of the field;

10. Emphasise the value of learning by practical investigation and production informed by critical understanding;

11. Produce graduates that can work in high-pressure environments and adapt to a rapidly changing technological world.

9. Programme Intended Learning Outcomes

Each subdivision of the below programme learning outcomes has been mapped to the QAA typical benchmark standards for Music (pages 18-20) and Computing (page 14). The prefixes "M" and "C" refer to Music and Computing, respectively, and the preceding number relates to the order that the standard statements appear in the documents. In the case of Music (M), the benchmark standards are broken into Intellectual, Practical, and Personal skills, which are indicated in the mapping with the symbols Int, Pra, and Per, respectively.

9.1 Knowledge and understanding [C1, C2, M:Int1, M:Int2, M:Int3, M:Int5, M:Pra2, M:Pra3, M:Pra5, M:Per5]

On successful completion graduates should have developed:

1) A detailed understanding of the science of sound and the theory of music and its implications for the design and use of relevant technologies;

2) A sophisticated understanding of the fundamental concepts, principles, and theories of audio engineering;

3) A comprehensive grasp of approaches to digital sound synthesis and their creative and industrial applications;

4) An in-depth understanding of appropriate methods of storing, representing, and processing musical and sound information in the digital domain;

5) A sophisticated knowledge of computer programming concepts and algorithm design;

6) A critical appreciation for the broader context in which technologies are used within the field of professional audio, music, and other sonic arts.

9.2 Cognitive and intellectual skills [C2, C3, C4, C5, M:Int1, M:Int3, M:Int4, M:Int5, M:Pra1, M:Pra4, M:Per6, M:Per7]

On successful completion graduates should have developed:

1) The ability to critically analyse and apply appropriate knowledge and skills in the selection and use of digital, audio, and music technologies, demonstrating effective judgement;

2) The expertise to design and build technological resources through effective computer programming to solve problems or provide aesthetic solutions;

3) Identify, discuss, and tackle different kinds of problems;

4) The capacity to critically evaluate systems and materials using evidence to support conclusions and recommendations;

5) The ability to synthesise and critically evaluate information and present it in the form of a clear and coherent argument in a variety of ways, including discriminating between and evaluating divergent opinions.

9.3 Key and transferable skills [C1, C2, C3, C4, C5, C6, M:Int4, M:Pra4, M:Per2, M:Per3, M:Per4, M:Per6, M:Per8]

On successful completion graduates should have developed the ability to:

1) Communicate effectively both in written and oral forms;

2) Assimilate information and synthesise and organise relevant outputs;

3) Evaluate problems to suggest appropriate digital and automated solutions;

4) Work autonomously and as part of an interdisciplinary team, showing self-motivation, critical self-awareness, and an ability to manage time and resources according to specific tasks, deadlines, or job roles;

5) Discuss and debate issues of design, ethics, and aesthetics;

6) Learn effectively for the purpose of continuing professional development and in a wider context throughout their career.

9.4 Employment related skills [C1, C2, C3, C4, C5, C6, M:Int4, M:Per1, M:Per2, M:Per3, M:Per6]

On successful completion graduates should have developed:

1) The ability to present work in an accessible form that is intelligible to expert and non-expert audiences;

2) A logical approach to problem-solving, drawing on appropriate information to inform solutions;

3) The ability to review, select, and manage information;

4) A capacity to undertake independent projects with minimal guidance;

5) The expertise to interview and engage professionally with industry contacts and experts from other disciplines;

6) An ability to engage in continual self-evaluation and participate in additional learning and creative development where necessary.

9.5 Practical skills [C1, C2, C3, C4, C5, C6, M:Int4, M:Int5, M:Pra1, M:Pra3, M:Per7, M:Per8]

On successful completion graduates should have developed the ability to:

1) Use computing, audio, and music technologies effectively, professionally, and creatively;

2) Plan and execute creative technology development;

3) Prepare written work that reflects the interdisciplinary nature of the discipline;

4) Effectively present technical and creative information in front of audiences making good use of presentation tools;

5) Use technical and creative literature to good effect;

6) Apply appropriate practices within a professional, legal, sustainable, and ethical framework.

10. Admissions Criteria, including APCL, APEL and Disability Service arrangements

All applicants must have GCSE (or equivalent) Maths and English at Grade 4 or above (equivalent to a Grade C as per the GSCE grading system until 2017).

Entry Requirements for BSc (Hons) Computing, Audio, and Music Technology	
A-level/AS-level	104-112 points. General Studies accepted.
BTEC National Diploma/QCF Extended Diploma	Pass DMM in any subject.
Access to Higher Education at level 3	Pass a named Access to HE Diploma (any subject) with at least 33 credits at Merit / Distinction.
Welsh Baccalaureate	OK to accept as add on points but also to have the 2 A Levels.
Scottish Qualifications Authority	120 points
Irish Leaving Certificate	104-112 pts. (e.g. H3 H3 H3 H4 H4) plus English and Maths.
International Baccalaureate	26 Points English & Maths accepted within Higher Level = 4+ (A1) or 5 (A2/B) Standard Level = 5+ (A1) or 6 (A2/B) If overseas & not studying English within IB – MUST have **IELTS**: 6.0 overall with 5.5 in all elements.

Accreditation of Prior Learning	Accreditation of Prior Learning will be considered, where appropriate, on a case-by-case basis and in line with the university's [Academic Regulations](#).

11. Progression criteria for Final and Intermediate Awards

Students must pass 360 credits to pass the final award; 240 for a Diploma of Higher Education, and 120 for a Certificate of Higher Education.

12. Non Standard Regulations

N/A

13. Transitional Arrangements

N/A

Appendices
Programme Specification Mapping (UG) – core modules

Appendix 1: Programme Specification Mapping (UG): module contribution to the meeting of Award Learning Outcomes

CORE MODULES: tick those Award Learning Outcomes the module contributes to through its assessed learning outcomes.

Core Modules		Award Learning Outcomes contributed to (for more information see Section 8)																													COMPENSATABLE Y/N	Assessment Element(s) and weightings
		8.1 Knowledge & understanding						8.2 Cognitive & intellectual skills					8.3 Key & transferable skills						8.4 Employment related skills						8.5 Practical skills							
		1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6		
Level 4	CAMT401																															Y	C1 75%, T1 25%
	CAMT402																															Y	C1 75%, P1 25%
	CAMT403																															Y	C1 75%, T1 25%
	CAMT404																															Y	C1 100%
Level 4 LOs																																	
Level 5	CAMT501																															Y	C1 100%
	CAMT502																															Y	C1 90%, P1 10%
	CAMT503																															Y	C1 70%, P1 10%, T1 20%
	CAMT504																															Y	C1 100%
Level 5 LOs																																	
Level 6	CAMT601																															N	C1 100%
	CAMT602																															Y	C1 100%
	CAMT603																															N	C1 90%, P1 10%
	CAMT604																															Y	C1 100%
Level 6 LOs																																	
Confirmed Award LOs																																	