

Birmingham City University Technology Innovation Centre

Undergraduate Programme

Programme Specification including Student Guide and Employer Guide

BSc (Hons) Music Technology

Date of Course Approval/Review	Version Number	Version Date
10 May 2007	2.05	10 May 2007



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Definitive Documents and Version Control

This document has a version number and reference date in the footer. Documents originating from the 1999 scheme follow the sequence 1.01, 1.02, 1.03 etc. Documents originating from the 2004 scheme begin with 2.01 as the first released version and follow the same sequence.

The process leading to introduction of new courses, and major changes to courses follows *tic* procedure QA 1 and culminates in approval by the University's Senate.

The process leading to introduction of minor changes to modules and courses follows *tic* procedure QA 5 and culminates in approval by the Dean.

The reference date will be that of the validation event, minor changes board, or other meeting at which formal consideration was given.

Further details about the course and document development may be obtained from minutes of the validation, or minor changes board. A history of the document is summarised in the table below and further information relating to past versions can be obtained from the *tic* Registry.

BSc Music Technology Programme Specification, Student and Employer Guides			
Version	Event	Date of event	Authorised by
2.01	Scheme Validation/ Review	8 April 2004	Dean of Faculty
2.02	Scheme Validation/Review (amended to meet condition)	8 April 2004	Panel Chair
2.03	Minor changes Board of Studies Notification of IIE (now IET) accreditation	22 July 2005 7 Sept 2005	Dean of Faculty
2.04	Minor changes Board of Studies	22 June 2006	Dean of Faculty
2.05	Review and Re-Approval meeting	10 May 2007	Dean of Faculty

BSc (Hons) Music Technology

PROGRAMME SPECIFICATION

NOTE: This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes advantage of the learning opportunities that are provided. More detail on the specific learning outcomes, indicative content and the teaching, learning and assessment methods of each module can be found (1) at <https://web.tic.ac.uk>, (2) in the Module Specification Handbook, and (3) in the Student Handbook. The accuracy of the information contained in this document is reviewed by the University and may be checked within independent review processes undertaken by the Quality Assurance Agency.

The information from this specification may be selectively extracted and included in documents that are more appropriate for students, intending students and employers.

1	Awarding Institution / Body:	Birmingham City University
2	Teaching Institution:	Technology Innovation Centre
3	Programme accredited by:	Institution of Engineering and Technology * see note below
4	Final Award:	BSc (Hons)
5	Programme Title:	Music Technology
6	UCAS Code:	W350
7	QAA Benchmarking Group:	Engineering

*** Application to Institution of Engineering and Technology for re-accreditation pending (May 2008).**

8 Aims of the programme

The programme aims to provide learners with:

- 1 A broadly based and stimulating curriculum which combines a study of the technology, creative and production processes and business skills relevant to the music and audio industry;.
- 2 Opportunities for intellectual and creative development through the application of technical knowledge and practical skills associated with audio systems and music to the creation of high quality audio related products.
- 3 A wide range of transferable and marketable skills and knowledge relevant to employment opportunities within the music and associated industries;
- 4 An enjoyable and rewarding educational experience through involvement in a wide range of participative and active teaching and learning approaches;
- 5 An awareness of the legal and ethical issues relating to the music industries;
- 6 A foundation of principles and techniques which facilitate future professional development and lifelong learning;
- 7 A qualification designed to satisfy the accreditation requirements of relevant professional bodies.

9 Intended learning outcomes and the means by which they are achieved and demonstrated: the programme provides learners with opportunities to develop and demonstrate knowledge and understanding, skills and other attributes as follows:

Knowledge and understanding of:	Teaching, learning and assessment methods used:
<ol style="list-style-type: none"> 1. Music production processes including managerial, organisational, creative, technical, practical and operational aspects. 2. The communication of musical concepts through audio media and the aesthetic and critical creative processes involved. 3. The principle electronic and computer-based technologies that underpin audio technology practice, application, system design and distribution across a variety of platforms. 4. Digital Signal Processing (DSP) techniques for music signal manipulation. 5. Acoustic and psychoacoustic principles applicable to music and sound propagation/perception and acoustic characteristics of studios and auditoria. 6. Health and safety issues associated with sound and audio technology equipment and awareness of legislation pertaining to hearing and acoustics. 7. Business management and organisational theories and techniques applicable to audio media enterprise and the legal and regulatory systems within which they operate. 8. The role, structure and organisation of the music and audio industries and the wider mass media, 	<p>Knowledge and understanding are acquired through formal lectures, technical and musical practical areas, laboratory experiments, seminars and directed independent learning activities.</p> <p>Learners are assessed, formatively and summatively, by a number of methods, including seminars, coursework, examinations (seen and unseen, open-and closed-book), presentations, and practical project work.</p> <p>A range of assessment methods are employed including coursework assignments, tests and end of module examinations. Assessment methods for each module are identified in a module guide and, for coursework, assessment details and criteria are specified in each assignment brief.</p>

encompassing ethical and social implications of technical and cultural change.

9. The organisational, teamwork and practical management approaches employed throughout a typical production process cycle.

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<p>Intellectual / cognitive skills:</p> <ol style="list-style-type: none">1. Analyse, critically evaluate and produce sound recordings demonstrating the synthesis of a variety of music technology principles and concepts.2. Select/assemble music and sound for visual media.3. Analyse sound systems and audio amplification technology.4. Apply appropriate managerial and creative techniques to solve a diverse range of practical challenges.5. Evaluate music technology products, processes and designs; expose their strengths and weaknesses, consider alternatives and make reasoned choices.6. Analyse ideas and suggest appropriate production processes in the realisation of music and audio media.7. Use proficiently information and materials from a variety of sources.	<p>Teaching, learning and assessment methods used:</p> <p>Intellectual skills are developed through formal lectures, technical and musical practical areas, laboratory experiments, seminars and directed independent learning activities.</p> <p>Analytical skills are developed through coursework tasks that encourage creativity and problem solving using a range of systems and technologies relevant to the music and audio industries.</p> <p>Assessment methods include practical project work, individual and group assignments, written coursework, laboratory experimentation, examinations (seen and unseen, open-and closed-book).</p>
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<p>Practical, research and independent learning skills:</p> <ol style="list-style-type: none">1. Plan and undertake tasks, work to deadlines, and accept accountability for learning decisions;2. Apply appropriate methodologies and sources for research;3. Collect relevant information, assimilate knowledge,	<p>Practical applications are a key feature of the course and are emphasised in course design and delivery. Small-group tutorial and practical work comprise up to two thirds of timetabled sessions.</p> <p>Assessment for practical work can include laboratory demonstrations and tests as well as practical activities which</p>
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<p>marshal a coherent and rational argument, and relate theory and practice;</p> <ol style="list-style-type: none"> 4. Draw independent conclusions based on a rigorous, analytical and critical assessment of own and others' work; 5. Demonstrate a range of synthesis techniques 6. Construct and demonstrate electronic/sound circuits and systems with attention to health and safety; 7. Edit and compile recordings; 8. Use appropriate laboratory equipment and software tools to undertake experiments and to process data; 9. Apply practical, organisational and production skills to the fields of sound recording, manipulation and distribution, paying attention to the underpinning musical and technological processes. 10. Design and budget for development of recording facilities. 11. Identify and apply appropriate technical/regulatory standards. 	<p>may be written up as coursework.</p> <p>Research and independent learning skills are central to the programme and are developed throughout the course. The Learning Centre provides comprehensive internet and text resources and specialist staff to provide tutorial support for skills development.</p> <p>As well as developing and applying skills through assignment work, particular emphasis on research work is associated with the year 1 and 2 Music Industry and Production Management modules and the final year project.</p> <p>Independent learning is encouraged through research tasks for assignments and the final year project, and in the requirement to plan work schedules to meet deadlines for coursework submission.</p>
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Transferable / key skills:

1. Work with, and relate effectively to, others.
2. Manage time and prioritise workloads.
3. Make effective oral, written and visual presentations.
4. Access and make appropriate use of relevant numerical and statistical information.
5. Organise and manage technical/music performance projects
6. Make effective use of information and communications technologies, including word and data processing packages, the internet, email and electronic information retrieval systems.
7. Understand career opportunities and begin to plan a career path.
8. Reflect on own learning, be constructively self-critical and demonstrate self-reliance.

Teaching, learning and assessment methods used:

Transferable/key skills are core to the learning strategy of the programme. They are pervasive, and are incorporated into modules and assessments as appropriate, e.g. team-working skills are fostered via group, task-based practical projects. Reflection and self awareness are fostered by keeping logbooks and submitting self assessment documentation in support of personal performance.

The use of information technology plays an active role throughout the course.

Assessment methods include practical projects, presentations, coursework, peer-and self-assessment.

10 Programme structure and requirements, levels, modules, credits and awards.

The BSc (Hons) programme is normally studied over three years full-time or five years part-time, and students may if they wish move between full and part-time modes of attendance. The academic year runs from September to June. The course is divided into study units called modules, each of 24 credits. Students complete 120 credits at levels 4, 5 and 6 (corresponding to years 1, 2 and 3 of the full-time programme). Each 24 credit module represents 240 hours of student learning and assessment.

The Faculty's BSc (Hons) degrees can be studied in sandwich mode. Students who, in addition to satisfying requirements for an honours degree, successfully complete an approved industrial placement between levels 5 and 6 (full time year 2 and 3) obtain the award of a sandwich honours degree.

The structure of the course, the modules, levels and credit ratings, and the awards which can be gained are shown below.

Stage 1 Level 4

Module number	Module name	Credit
	Music Industry D1 Music industry, structure and culture of organisations, music products, legal and ethical aspects, context of business, research skills, data collection and analysis, planning, scheduling and management of work, presentations	24
	Digital Audio Technology D1 Core acoustic theory, fundamentals of digital audio, analogue to digital recording, digital to analogue reproduction, storage Media, digital interconnections and advanced digital audio principles	24
	Audio Electronics D1 Basic AC and DC theory, electrical measurements, circuits and components with an emphasis on audio applications. Basic digital circuitry, filters, feedback, and signal generating circuits.	24
	Music Technology and Sound Recording D1 Analogue recording techniques, control systems and processes, synthesis systems.	24
	Music and Critical Studies D1 Aural skills, historical analytical skills, technological developments and contexts, performance analysis	24

Award: Cert HE (120 credits)

Stage 2 Level 5

Module number	Module name	Credit
	Media Production Management D2 Business development, production management techniques, project, finance and entrepreneurship.	24
	DSP and Networks for Music Technology D2 Computer hardware and software, networking principles, DSP techniques used in music technology equipment	24
	Audio Systems D2 Audio systems, mixer topology, preamps, equalization, audio compressors, loudspeakers, measurement and power systems	24
	Music Technology and Sound Recording D2 Stereo editing, sampler instrument creation, Protools training, portfolio.	24
	Music and Critical Studies D2 Popular music, world music, reverse production, performance analysis.	24

Award: Dip HE (240 credits)

Stage 3 Level 6

Module number	Module name	Credit
	<p>Media Project D3 Provide an opportunity to develop in-depth knowledge and skills in an area relevant to the course and ability to manage activities and resources, and to generate, implement and report on solutions to meet project objectives.</p>	24
	<p>Interactive Music Systems D3 Event and venue management including relevant legislation, music performance hardware and software, control systems, sensor systems, interfacing, and interactive and generative music techniques.</p>	24
	<p>Acoustics and Musical Instruments D3 Acoustic Theory, Psychoacoustics, Acoustic Measurement Equipment, Musical Instruments and Studio design</p>	24
	<p>Music Technology and Sound Recording D3 Recording project management, restoration techniques, mastering skills, surround, final portfolio.</p>	24
	<p>Music and Sound for Film and Video D3 Film and video music and sound recording and production. Technologies, processes and principles. Personnel, editing and critical analysis.</p>	24

Award: BSc (Hons) (360 credits)

Course Structure – BSc (Hons) Music Technology (FC0218)

Level 6

Media Project D3	Interactive Music Systems D3	Acoustics and Musical Instruments D3	Music Technology and Sound Recording D3	Music and Sound for Film and Video D3
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Level 5

Media Production Management D2	DSP and Networks for Music Technology D2	Audio Systems D2	Music Technology and Sound Recording D2	Music and Critical Studies D2
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Level 4

Music Industry D1	Digital Audio Technology D1	Audio Electronics D1	Music Technology and Sound Recording D1	Music and Critical Studies D1
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Industry and Project Theme

Digital Systems Theme

Acoustics and Audio Electronics Theme

Sound Recording Theme

Music Studies Theme

11 Support for Learning

Students are encouraged to identify and, with guidance, to reflect on their own learning needs and are offered the following support as appropriate to those needs:

An induction programme dealing with orientation and the dissemination of essential information.

A dedicated Learning Centre with open access learning materials, resources and full-time staff specialising in a variety of support areas.

A Student Handbook, containing information relating to the University, Faculty, course and modules.

Access to administrative staff and to academic staff, including the Tutors, Course Director and Programme Manager, at reasonable times.

Support staff to advise on pastoral and academic issues, and to offer support and assistance with the keeping of Students' Progress Files.

Access to Faculty resources, including a range of IT equipment and the services of, and guidance from, IT support staff.

Access to the University's Student Services, including those offered by the careers service, financial advisers, medical centre, disability service, crèche, counselling service and chaplaincy.

12 Criteria for admission

All applicants must have GCSE (grade C or above) in Mathematics and English Language, or equivalent. In addition, applicants should have one of the following, for which the typical tariff offer is 220 points for Curriculum 2000, or equivalent for other qualifications. Actual tariff offers may vary from 220 points.

Qualification	Requirements
Curriculum 2000, A Levels	Five GCSEs/GCEs including at least two subjects at A2 level. Points tariff can include AS level
Curriculum 2000, AVC.	Two 6-unit or one 12-unit AVCE.
Irish Leaving Certificate	Passes in four subjects at the higher grade.
Scottish Certificate of Education	Passes in four subjects at the higher grade.
International Baccalaureate or European Baccalaureate	Typically 28 points
BTEC/Edexcel National Certificate/National Diploma	For National Diploma, Typically M, M, P
A pass in a recognised Access or Foundation Year course	
An appropriate Advanced General National Vocational Qualification	
A professional qualification of an appropriate standard	
A qualification deemed equivalent to one of the above	

Other learning and experience may be considered for entry to the programme. A student may be allowed entry to the course if he or she does not have the standard entry qualifications but can provide evidence of necessary knowledge and skills to successfully enter and complete the programme.

Applicants with a Higher National Certificate or Higher National Diploma, including Merits, in an appropriate subject, or an equivalent qualification, may be offered entry with advanced standing.

UCAS applicants are invited to visit the **tic** during open days held through the academic year. Open day programmes include a tour of facilities and an introduction to the **tic**'s courses and activities. Meetings are arranged between course tutors and prospective students to ensure opportunity is provided for individual questions and clarification of the course content.

13 Evaluation and improvement of quality and standards

Committees: Board of Studies Examination Board Learning Management Committee Faculty Board Learning Quality Committee	Mechanisms for review and evaluation: Module reviews Course review and re-approval events Accreditation by professional bodies Annual Monitoring Report Student feedback questionnaires Annual staff appraisal External Examiners' Reports Course team meetings
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14 Regulation of assessment

Details of the mechanisms and criteria for assessment in individual modules, and the means of determining final degree classifications, are published widely. Students are able to access the University's Standard Undergraduate Assessment Regulations on the Intranet and individual and collective guidance is given by academic staff on their operation at appropriate times throughout the course.

To qualify for an Honours degree a student must successfully complete all required modules and obtain 360 credits (each module has a 24 credit value). Only assessments at levels 5 and 6 (that is second and third year modules on the 3-year full-time programme) are used to calculate the degree classification. The pass-mark in all modules is 40%.

Degree classifications are determined, after successful completion of all the course modules from whichever is the best of:

1. The average of the marks for the level 5 and level 6 modules, or
2. The average of the marks for the five level 6 modules, or
3. The average of the level 6 Media Project module mark plus the best three from the remaining four level 6 modules.

The highest average is used to obtain the degree classification according to the following bands:

First class honours	aggregate mark of 70% or above
Upper second class honours	aggregate mark of 60%-69%
Lower second class honours	aggregate mark of 50%-59%
Third class honours	aggregate mark of 40%-49%

External Examiners are appointed. Their work includes:

- Reviewing coursework assignments and assessment criteria
- Approving examination papers
- Monitoring standards through moderation of completed assessments
- Attending Examination Boards
- Participating in the course review processes.

BSc (Hons) Music Technology

Student Guide

Background

The Technology Innovation Centre (*tic*) of Birmingham City University has for many years delivered courses that combine study of the latest computing technologies in the context of business, management and media-related industries. Through its links with industrial and commercial organisations and partners the *tic* fosters an environment which promotes opportunity and career fulfilment.

The BSc (Hons) Music Technology Course, which was introduced in 2001 in partnership with the University's Birmingham Conservatoire, was a major development. The course holds a unique position in UK higher education, drawing on the dual strengths of a cutting edge technology institution and a premier Conservatoire.

The course aims to provide a combination of technical know-how and creative skills to enable the pursuit of interests and careers in a variety of sectors including entertainment and leisure, commerce and education.

The Study Programme

The BSc Music Technology study programme is aimed at creating multi-skilled and versatile graduates who can both use technology to assist in the creation, performance and distribution of music and understand the underlying principles in order to make informed decisions about technologies, whilst applying an understanding of the aesthetic considerations. The course has five themes:

The ***sound recording*** theme includes recording techniques, microphone techniques and project management skills. Practical synthesis, sampling, studio editing, mixing, mastering and delivery techniques are explored across a range of hardware and software systems as production skills are developed.

The ***acoustics and audio electronics*** theme introduces basic electronic components and circuits to enable filters and signal generating circuits to be investigated. The principles of operation of audio equipment are explored followed by the acoustics of instruments, studios and auditoria.

The ***digital systems*** theme introduces fundamentals of signals, sound and synthesis, leading to data transfer, music applications of digital signal processing (DSP), interactive, generative and algorithmic music, and developing into an understanding of audio and control systems for live music performance.

The ***music studies*** theme develops skills of critical analysis. Exploring a wide range of music styles there is a focus on the changing relationships between performers, composers and listeners. In the final year, this experience

enables informed implementation of principles in the production of music for film.

The **industry and project** theme provides an insight into the business and financial framework of the music industry and an appreciation of the impact of new technologies, which provide the context for developing skills in research, project management, and entrepreneurship. The media project in the final year provides opportunity to develop in-depth knowledge and skills with a choice of specialist topic.

Course Delivery

The **tic's** philosophy of developing practical and relevant skills translates into its approach for course delivery. Emphasis is placed on small group activities assessed through project and assignment work to reflect skills needed in creative industries. Skills acquisition in the latest recording and audio technologies is made possible by continuous development of the resources at both Faculties – the **tic's** extensive computing, communication and network facilities and Birmingham Conservatoire's advanced analogue and digital recording facilities.

As well as extensive general computing, internet and laboratory resources, the course is supported by studios, production editing suites and industry-linked facilities such as the Media Vault and Music for Media projects leading to exciting opportunities for partnerships with entrepreneurial firms giving further access to cutting-edge digital media creation and management tools.

The team of course tutors includes specialists in the various technical, creative and business areas. Students also have access to the **tic's** Learning Centre with tutors to provide individual support in practical study areas. External industrialists complement the study programme, providing input ranging from guest lectures to offering more substantial contribution across entire modules.

Sandwich Placements

Students are encouraged to consider the option of a period in industry between years 2 and 3 of the full-time course. Recent students have gained experience in a range of music technology related professional environments including recording studios, PA and pro audio companies, theatre production and independent record labels. The **tic** has a placements officer who manages the scheme and assists students in making applications.

Accreditation

The BSc (Hons) Music Technology is accredited by the Institution of Engineering and Technology as satisfying full academic requirements for IEng. (Subject to confirmation of re-accreditation)

The Employment Market

Employers require enthusiastic and adaptable team workers who can apply their creative and practical skills in a fast-developing sector of the entertainment industry. Recent BSc Music Technology graduates have followed a range of career paths including in recording studios as sound engineers and producers, working for PA companies and as sound designers. Graduates have also been taken on by major record labels in areas such as marketing and copyright protection.

Other possible career paths leading from this programme include:

- Recording industry: mixing, programming.
- Broadcasting: mixing, production, sound editing.
- Live sound: mixing and audio-visual presentation.
- Film industry: location recording, dubbing.
- Multimedia: soundtrack creation, special effects, music distribution and promotion.
- Education: music technology, music and ICT teaching.
- Manufacturing: product development, sales and marketing.
- Journalism: music/music technology journals, technical writing.

How to apply

University: Birmingham City University
Faculty: [Technology Innovation Centre](#)
Millennium Point, Curzon Street, Digbeth
Birmingham B4 7XG
Telephone: (+44) (0)121 331 5400
<http://www.tic.ac.uk>

Applications: UCAS, Rosehill, New Barn Lane
Cheltenham, Gloucestershire GL52 3LZ
Telephone (+44) (0)1242 223707
<http://www.ucas.ac.uk/>

UCAS code: W350

Course Length: 3 years full-time
4 years sandwich

Location: Millennium Point, Birmingham

Enquiries: Information Officer (at the above address)
Telephone: (+44) (0)121 331 5400
Email: enquiries@tic.ac.uk

BSc (Hons) Music Technology

Employer Guide

Introduction

The BSc (Hons) Music Technology degree holds a unique position in UK Higher Education, drawing on the dual strengths of a cutting edge technology institution and a premier conservatoire. Both the Technology Innovation Centre (tic) and Birmingham Conservatoire are situated near Birmingham city centre. Further information is available at: <http://www.tic.ac.uk/> and <http://www.conservatoire.bcu.ac.uk/>

The tic supports individuals, organisations and communities in furthering their understanding and capabilities within a rapidly developing technology-based society, providing resources and specialised knowledge to meet the demands of the 21st Century. It has close links with industries and commerce and provides an education that is highly vocational and targeted and develops the skills and attributes that prepares its graduates for professional practice.

Facilities / Partnerships

The **tic** offers outstanding opportunities for combining learning, training and skill development with the transfer and implementation of innovative technologies for economic and social development. The **tic** commits significant resources in partnership with commercial organisations to ensure its graduates have been exposed to the latest industry standard technologies and practice.

Programme Aims

The BSc (Hons) Music Technology aims to produce versatile graduates whose wide range of technical and creative skills and knowledge equips them for a variety of roles within the modern recording and music industry as well as the broader field of creative industries.

By combining specialist education and training within both academic and practical contexts, the course aims to provide students with experience of professional practice and organisation in order to promote a strong vocational orientation.

The Curriculum

The content and structure of the BSc (Hons) Music Technology reflect the overall philosophy of integrating the technological and creative aspects of sound and music production. The course develops students' intellectual and creative abilities by providing knowledge of audio systems and music together with skills for developing high quality audio related products.

There are five broad themes:

- Industry and Project
- Digital Systems
- Acoustics & Audio Electronics
- Sound Recording
- Music Studies

In the industry and project theme, students will be acquainted with the importance of modern business approaches necessary for the support and development of innovative media business strategies in a fast evolving environment. The digital systems theme explores acoustics and audio electronics technology, which help to inform the application of systems for the creation and recording of sound and music, which is the main focus of the sound recording theme. Underpinning these modules, skills of critical analysis will be developed in the music studies theme including how technology has changed our relationship with music.

Expected outcome

On completion of the course students will have:

1. Understanding of acoustics and electronic generation and manipulation of analogue and digital signals for contemporary sound production.
2. Understanding of established concepts and theories of recorded sound as well as aesthetic awareness of the creative process of sound production and musical interpretation.
3. Practical skills in the use of a range of hardware and software based music and audio resources.
4. Knowledge of the technical principles of musical language and performance including instrument characteristics and formal analytical techniques.
5. Ability to evaluate new and existing technologies and assess their suitability for specific applications.
6. Knowledge and skills in the management of music and performance related projects.
7. Ability to use test equipment and measurement techniques to assess the performance of music technology equipment.
8. Understanding of the digital signal processing techniques applied in production of electronic music.
9. Knowledge of organisational, teamwork and practical management approaches employed throughout a typical production process cycle
10. Awareness of legislation pertinent to the working environment and media industry.

Accreditation

The BSc (Hons) Music Technology is accredited by the Institution of Engineering and Technology as satisfying full academic requirements for IEng. (Subject to confirmation of re-accreditation)