

Australian Guild of Music Bachelor of Music

CRS1201245

Unit Outlines

Music Technology

MUSTEC

101

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Music Technology 101

The following applies to Year One Bachelor of Music students.

Unit Outlines

Unit Name	Music Technology One
Unit Code	MUSTEC101
Unit Description	This unit will establish a theoretical and practical understanding of foundational music technology tools. Students will be introduced to basic acoustic principles, and gain an understanding of how these principles inform the capturing, processing, and synthesizing of sound. Students will use industry standard Digital Audio Workstations (DAWs) to record and edit audio, to sequence MIDI data, to explore traditional and non-traditional approaches to notation, and to develop an understanding of signal flow that can be used in both hardware and software applications.
Award(s)	Bachelor of Music
Unit Duration	One Semester (Twelve Weeks)
Year Level	Year One, Semester One
Unit Coordinator	TBA
Teaching Staff	Lecturer(s): TBA
Core/Elective	Core
Pre/Co-requisites	Nil
Credit Points	10 credit points
Mode of Delivery	x Face to face x E-learning (online) o Intensive/block mode (where the unit or a face to face component is delivered in a block) x Distance/independent learning (un-timetabled) x Full-time x Part-time o External x Fast track
Student Workload Delivery/ Contact Hours	Lecture - One hour Practical Session – One hour Tutorial - n/a Personal Independent Study – Six hours Total time commitment per week over 15 weeks of semester : Eight hours.
Resource Requirements	 Video camera (distance students) Web camera (distance students) Computer facilities Digital Audio Workstation with MIDI keyboard. External Technical Help a pair of enclosed headphones personal file storage (a USB drive or similar)

Unit Name	Music Technology One
Resources Provided	 On-campus equipment and performance facilities Online streaming video and additional referencing videos Library resources (see prescribed or recommended texts below) Pro Tools subscription Soundation Sequencing Software (Cloud)

Learning Outcomes

On successful completion of this unit, students are expected to be able to:

- 1. Demonstrate an understanding of basic acoustic principles and how these relate to the principles of recording and synthesizing sound.
- 2. Use industry standard digital audio workstation software to record, edit, and process microphone captured sound.
- 3. Sequence MIDI using both hardware and software instruments and demonstrate a knowledge of notational software.
- 4. Critically analyse and research music production technologies and techniques to make recommendations for applications in a diverse range of contexts.

Teaching Outline

Year One

Semester One

Week One

Introduction

Outline of course requirements, review of presumed knowledge, introduction to key acoustic and electronic sound principles. History of recording devices. Analog vs Digital audio, sampling theory, sample rates, bit resolution.

Week Two

Sound Editing and Digital Audio Workstations

Introduction to DAWs and sound editing. Overview of key studies production software packages, Pro Tools, Logic, and Ableton Live. Audio editing basics and techniques. Principles of recording audio, recording in DAW, using time clocks and tempo grid. Sound and Sample Sourcing.

Week Three

Introduction to Basic Synthesis and VST Synths

Introduction to principles of recording and synthesising sound, including sound synthesis, polyphonic instruments and multi timbral instruments. Synthesizer use in popular music and development of instruments.

Week Four

Standard Audio Effects

Introduction to basic audio effects and functions: EQ, Reverb, Pan, Volume and Pan. Introduce awareness of stereo field and depth.

(Assessment One - Interactive Written Examination due end of Week Four)

Week Five

Audio Editing and Practical Discussion

Sourcing samples and treating recorded audio to fit overall production vision. Incorporating automation for effect and mixing considerations. Mixing basics, filters and EQ, production considerations.

Week Six

Audio Production Management

Basic mixing and exporting, mix down and simple mastering for listening. Audio compression and file types. Discussion on DAW Editing Assessment.

(Assessment Two - DAW Editing Assignment due end of Week Six)

Week Seven

Introduction to MIDI

Overview and historical development of MIDI, MIDI data, Daisy chains, MIDI connections, MIDI devices & instruments, and incorporating notational software in production. Understanding MIDI terminology and functions, replicating musical terms. MIDI file sourcing for ideas and templates. Introduction to piano roll, expression and tools.

Week Eight

VST Instruments Introduction

Introduction to Virtual Studio Technology (VST) and use in production. Synthesizer modes and presets, samplers and generators, manipulation, programming. Hardware peripherals and controlling VST and MIDI externally.

Week Nine

Programming with VST Instruments

Controlling and manipulating VST instruments using MIDI and peripherals. Manipulation of MIDI data to produce musical outcomes, using peripherals and automation. Differences and similarities in electronic instruments vs acoustic.

Week Ten

Rhythm Parts and MIDI Writing

Writing original rhythm parts and manipulating samples. Samples, loops, drum machines, MIDI note writing, manipulating with hardware peripherals. Creative work planning.

Week Eleven

Mixing MIDI and VST

MIDI control, mixing and editing with VST, MIDI and Audio. Incorporating samples and manipulating existing material into remixed and newly devised works. Discussion on practical works.

Week Twelve

Basic Mastering

Basic mastering techniques, including levels, EQ, stereo pan, formatting for export.

(Assessment Three - Creative Work and Written Report due end of Week Twelve)

Student Assessment

Assessment Type	When assessed	Weighting	Learning Outcomes Assessed
Assessment One: Interactive Written Examination type of Assessment: written examination Duration: 1 hour. (Equivalent to 750 words)	Week Four	25%	1
Assessment Two: DAW Editing Assessment type of assessment: practical (Equivalent to 900 words)	Week Six	30%	2, 3, 7, 8
Assessment Three: Creative Work and Report type of assessment: written and practical (Equivalent to 1350 words)	Week Twelve	45%	1, 2, 3, 4, 5, 6, 8

All assessments will be undertaken by the Unit Coordinator. All assessment items must be submitted in order to pass this unit.

Assessment Details

Assessment One – Interactive Written Examination

Due: Week Four Duration: 1 Hour

(equivalent to 750 words)

Weighting: 25% Description:

Students are to complete an interactive online written examination (appropriate to a first-year tertiary standard) prescribed by the unit coordinator that demonstrates an emerging understanding around the fundamental principles of audio recording and digitally synthesizing sound. This will be based upon the material covered and issues raised in the first three weeks of Music Technology lectures. The examination will consist of a mixture of objective examination questions (multiple choice) as well as short answer responses and will have a fixed duration of 1 hour.

Assessment One - Marking Criteria: Interactive Written Examination

HD 85 - 100

Work of exceptional quality, which demonstrates comprehensive understanding of the subject matter, mastery of relevant skills, sophisticated or original critical and conceptual analysis and interpretation, and outstanding quality in clarity, precision and presentation of work.

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D 75 - 84

Work of superior quality, which demonstrates a thorough knowledge and understanding of the subject matter, proficiency in relevant skills, and analytical and conceptual ability of a high order

C65 - 74

Work of good quality, which displays a good understanding of the subject matter and a sound grasp of relevant skills

P 50 - 64

Work of satisfactory quality, which displays an adequate understanding of most of the subject matter and a sufficient grasp of relevant skills

N0 - 49

Work which is incomplete or displays an inadequate understanding of the subject matter or an inadequate grasp of relevant skills

Assessment Two - DAW Editing Assessment: One Minute Soundscape

Due: Week six
Duration: 1 minute

(equivalent to 900 words)

Weighting: 30 % Description:

In this DAW Editing Assessment, Students are expected to produce a 1 minute soundscape (appropriate to a first-year tertiary standard) from the source file and script provided by the unit coordinator that demonstrates a practical understanding of the skills required to produce such a final mastered product.

Utilising the skills and techniques gained from the first six weeks of Music Technology lectures, the student is expected to utilise their skills at DAW editing to arrange, edit and mix a selection of diverse audio clips in order to create a final mastered stereo mix down of 1 minute duration in length.

Assessment Two – Marking Criteria: One Minute Soundscape

HD 85 - 100

A soundscape of an outstanding calibre, demonstrating artistic maturity and an exceptional level of musical and technical design, sophisticated or original critical and conceptual analysis, and exemplary quality of clarity and precision of original conception.

D 75 - 84

A soundscape of superior musical and technical quality, which demonstrated a comprehensive knowledge and understanding of the subject matter, proficiency in relevant skills, and analytical and conceptual ability and

precision of original conception.

C65 - 74

A soundscape of a good musical and technical standard, demonstrating a thorough working knowledge of the subject matter and a sound grasp of relevant skills with an adequate quality of clarity and precision of original conception.

P 50 - 64

A soundscape of satisfactory musical and technical design, which (despite a few missing points of detail) displays an adequate understanding of most of the subject matter and a sufficient grasp of relevant skills of the task presented.

N0 - 49

An soundscape of unsatisfactory musical and technical quality which does not meet the required standard: work is of an insufficient level, displays an inadequate understanding of the subject matter or an inadequate grasp of the relevant skills required of the task presented.

Assessment Three – Creative Work and written Report

Due: Week twelve

Duration: 2 - 3 minutes with 700 word explanation

(equivalent to 1350 words)

Weighting: 45 % Description:

Students are to Produce a piece of music (appropriate to a first-year tertiary standard) that makes use of recorded audio, sampled sounds, and MIDI instruments utilising the skills and techniques gained from the first term of Music Technology lectures. The piece does not have to be an original composition. Sampled material must be referenced appropriately and the final mixed down, mastered product should be 2 to 3 minutes in duration.

For the written component (in consultation with the unit coordinator) students are expected to research and evaluate two DAWs to identify key differences between the software packages, as well as outlining why they selected their DAW of choice. The report should also reflect on how they employed music production techniques to achieve an intended aural result, and how this intent was shaped by research into such techniques and/or music producers relevant to their creative practice.

Assessment Three - Marking Criteria: Creative Work and written Report

HD 85 - 100

Work of exceptional quality, which demonstrates comprehensive understanding of the subject matter, mastery of relevant skills, sophisticated or original critical and conceptual analysis and interpretation, and outstanding quality in clarity, precision and presentation of work.

D 75 - 84

Work of superior quality, which demonstrates a thorough knowledge and understanding of the subject matter, proficiency in relevant skills, and analytical and conceptual ability of a high order

C65 - 74

Work of good quality, which displays a good understanding of the subject matter and a sound grasp of relevant skills

P50 - 64

Work of satisfactory quality, which displays an adequate understanding of most of the subject matter and a sufficient grasp of relevant skills

N 0 - 49

Work which is incomplete or displays an inadequate understanding of the subject matter or an inadequate grasp of relevant skills

Prescribed and Recommended Readings

Relevant readings will be available on LMS on a weekly basis

All written work is to be cited in APA author-date style:

http://www.bibme.org/citation-guide/apa/

Course Outcomes

#	Course Learning Outcomes On completion of the course the student should be able to demonstrate:	Unit Learning Outcomes	Assessments
1	A broad knowledge of the applied, theoretical and historical basis of the discipline	1, 2, 3	1, 2, 3 etc]
2	A depth of disciplinary knowledge in a professionally applicable specialisation	1, 2, 3	1, 2, 3
3	An understanding of the processes of musical scholarship and research	4	3
4	The ability to work both independently and collaboratively in diverse and complex musical settings	2, 3	2, 3
5	Effective written, verbal and interpersonal communication skills	4	3
6	Critical thinking and analytical skills appropriate to a range of contexts including further study	4	2, 3
7	The ability to apply specific musical skills to a wide range of professional contexts	1, 2, 3	2, 3
8	The capacity to apply technological and creative solutions to contemporary musical practices	1, 2, 3	2, 3

⁹ The ability to incorporate knowledge from the business and legal fields to a portfolio career in the music profession.

Graduate Attributes

#	Graduate Attribute Successful completion of this unit will contribute to the attainment of the following graduate attributes:	Unit Learning Outcomes	Course Learning Outcomes	Assessments
1	Deep disciplinary knowledge	2, 3	1, 2	1, 2, 3
2	The ability to apply knowledge and skills in innovative ways	2, 3, 4	3,4, 8	2, 3
3	A commitment to lifelong learning	1, 2, 3, 4	1, 6	1, 2, 3
4	Effective communication skills for diverse contexts	4	5	3
5	The capacity to work independently and collaboratively	1, 2, 3, 4	4	2, 3

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Music Technology 201

The following applies to Year Two, Bachelor of Music students.

Unit Outlines

Unit Name	Music Technology Two
Unit Code	MUSTEC201
Unit Description	The unit will build upon the concepts introduced in Music Technology 101 to further develop a conceptual understanding of music production techniques and practices and gain practical skills in how to implement these techniques and practices across a range of genres and styles. Students will focus on using standard music production tools to facilitate the recording, editing, arranging, and scoring of musical material at a high standard and across a range of situations, and gain knowledge of safe practice in the use of standard audio equipment.
Award(s)	Bachelor of Music
Unit Duration	One Semester (Twelve Weeks)
Year Level	Year One, Semester One
Unit Coordinator	ТВА
Teaching Staff	Lecturer(s): TBA
Core/Elective	Core
Pre/Co-requisites	A pass in Music Technology 101
Credit Points	10 credit points
Mode of Delivery	x Face to face x E-learning (online) o Intensive/block mode (where the unit or a face to face component is delivered in a block) x Distance/independent learning (un-timetabled) x Full-time x Part-time o External x Fast track
Student Workload Delivery/ Contact Hours	Lecture - One hour Practical Session – One hour Tutorial - n/a Personal Independent Study – Six hours Total time commitment per week over 15 weeks of semester : Eight hours.
Resource Requirements	 Video camera (distance students) Web camera (distance students) Computer facilities Digital Audio Workstation with MIDI keyboard. External Technical Help a pair of enclosed headphones personal file storage (a USB drive or similar)

Unit Name	Music Technology Two
Resources Provided	 On-campus equipment and performance facilities Online streaming video and additional referencing videos Library resources (see prescribed or recommended texts below) Pro Tools subscription Soundation Sequencing Software (Cloud)

Learning Outcomes

On successful completion of this unit, students are expected to be able to:

- 1. Demonstrate practical skills across a broad range of music production techniques, including preparing ensembles for live capture, selecting and editing performances to create a compiled final take, and using virtual instruments to develop complete works within DAWs.
- 2. Research and evaluate current music technologies and equipment and use critical thinking skills to apply knowledge effectively.
- 3. Safely configure and operate music equipment in live and studio contexts
- 4. Present scholarly reflections on the creative process and communicate information and ideas effectively in both written and oral formats.

Teaching Outline

Year Two

Semester One

MUSIC TECHNOLOGY

Week One

Electronic and Programmed Music Structure

Introduction to unit, review of presumed knowledge. Elements of electronic music, similarities to traditionally composed physical work. Electronic genre discussions. Electronic & Electroacoustic Music Structure - rhythm, harmonic, melodic.

Week Two

VST Revision, Advancing VST Use, Synthesis Revision

Realistic Use and Advanced Manipulation of Virtual Instruments. Revise Synthesiser and VST instrument use and types. Discussion of Assessment 1 - DAW Sequencing Project.

Week Three

Developing Recording Techniques

Furthering understanding of recording software and use in production. Advancing use of plugins and sound manipulation tools. Revision of automation and extended techniques.

Week Four

Year Two

Practical Discussion, Advancing Synthesis

Devising project structures, adding additional textures and layers. In depth use of automation and MIDI manipulation for VST instruments. Programming and manipulating synthesisers at an advancing level.

Assessment One - DAW Sequencing Project due.

Week Five

Audio Recording and Multitracking

Overview and revision of microphone types and preamplifiers. Microphone placement and recording instruments. Considerations of recording types between live, studio, large and small ensembles, classical vs modern music.

Week Six

Audio Plugins Review and Development

Review and introduction of further EQ, Reverb, Filter, Overdrive, Modulation and spatial techniques. Incorporating plugins to achieve realistic and interesting effects. Mix and effect bus processing and audio routing.

Week Seven

Advancing MIDI and Audio Techniques

Developing MIDI and audio recording techniques, incorporating live instruments with digital production. Revision of spatial awareness and musical layers.

Week Eight

Mixing and Recording Techniques Continued

Further mixing considerations to achieve musical production outcomes. Recording tools, overdubs, audio manipulation and polishing. Discussion on assessment and assistance.

(Assessment Two: Multitrack Recording and Mixing Project due end of Week Eight)

Week Nine

Synchronising Audio to Video

Introduction to working with video and producing for synchronising projects. Form & structure in non-traditional musical forms. Synchronisation types and planning. Time code production and manipulation. Structuring and planning synchronised works, sourcing video and developing concepts.

Week Ten

Production Techniques for Video Synchronisation

Demonstration of planning video synchronisation projects, planning works and compiling sounds, samples, acoustic and virtual instruments.

Week Eleven

Year Two

Mixing Tools

Advancing effect use for mixing, editing and automating. Discussion of practical work. Revising and developing bus sends and mixing techniques.

Week Twelve

Practical Work Discussion

Mixing and level considerations for synchronised works. Mastering, compression and EQ tools. Exporting video with audio works, video formats and audio considerations. Assessment discussion and assistance.

Assessment Three - Creative Work and Written Report due.

Student Assessment

Assessment Type	When assessed	Weighting	Learning Outcomes Assessed
Assessment One: DAW Sound Design and Sequencing Project type of Assessment: written and practical assessment (Equivalent to 750 words)	Week Four	20%	1, 2
Assessment Two: Multitrack Recording and Mixing Project type of assessment: practical assessment (Equivalent to 900 words)	Week Eight	30%	1, 2, 6, 7, 8
Assessment Three: Creative Work and Written Report type of assessment: written and practical (Equivalent to 1350 words)	Week Twelve	50%	1, 2, 3, 4, 5, 6, 8

All assessments will be undertaken by the Unit Coordinator. All assessment items must be submitted in order to pass this unit.

Assessment Details

Assessment One – DAW Sound Design and Sequencing Project

Due: Week Four

Duration: 30 seconds - 1 minute (equivalent to 750 words)

Weighting: 20% Description:

Students are to create a piece of music (appropriate to a second-year tertiary standard) prescribed by the unit coordinator using an appropriate DAW that makes explicit use of programmed sounds on virtual instruments as the primary mode of musical expression. The piece can be in any genre.

For the written component students are to compile a 700 word report detailing the intent behind the software instruments used, and how sounds were programmed in a way that is appropriate within the intended genre.

Assessment One – Marking Criteria: DAW Sound Design and Sequencing Project

HD 85 - 100

Work of exceptional quality, which demonstrates comprehensive understanding of the subject matter, mastery of relevant skills, sophisticated or original critical and conceptual analysis and interpretation, and outstanding quality in clarity, precision and presentation of work.

D 75 - 84

Work of superior quality, which demonstrates a thorough knowledge and understanding of the subject matter, proficiency in relevant skills, and analytical and conceptual ability of a high order

C65 - 74

Work of good quality, which displays a good understanding of the subject matter and a sound grasp of relevant skills

P 50 - 64

Work of satisfactory quality, which displays an adequate understanding of most of the subject matter and a sufficient grasp of relevant skills

N0 - 49

Work which is incomplete or displays an inadequate understanding of the subject matter or an inadequate grasp of relevant skills

Assessment Two - Multitrack Recording and Mixing Project

Due: Week Eight
Duration: 2 - 4 minutes
(equivalent to 900 words)

Weighting: 30 % Description:

Students are expected to design and execute a live multitrack recording with a minimum of three live, microphone captured sounds, and three overdubbed parts (appropriate to a second-year tertiary standard). The overdubbed parts may be microphone captured, or MIDI performances.

The finished work should be presented in an appropriate DAW, making sure evidence is provided of editorial decisions and playlist edits/selections that demonstrate an ability to effectively edit multiple performances of a single song.

The mixing should demonstrate an appropriate balance between the tracks, suitable processing for the intended style (i.e. use of equalisation, dynamic processing, and time-based effects where appropriate), and any necessary mix bus processing required to present the work at a professional standard.

Assessment Two – Marking Criteria: Multitrack Recording and Mixing Project

HD 85 - 100

Work of exceptional quality, which demonstrates comprehensive understanding of the subject matter, mastery of relevant skills, sophisticated or original critical and conceptual analysis and interpretation, and outstanding quality in clarity, precision and presentation of work.

D 75 - 84

Work of superior quality, which demonstrates a thorough knowledge and understanding of the subject matter, proficiency in relevant skills, and analytical and conceptual ability of a high order

C65 - 74

Work of good quality, which displays a good understanding of the subject matter and a sound grasp of relevant skills

P 50 - 64

Work of satisfactory quality, which displays an adequate understanding of most of the subject matter and a sufficient grasp of relevant skills

N0 - 49

Work which is incomplete or displays an inadequate understanding of the subject matter or an inadequate grasp of relevant skills

Assessment Three – Creative Work and written Report

Due: Week Twelve

Duration: 2 - 4 minutes with 500 word reflective report

(equivalent to 1350 words)

Weighting: 45 % Description:

Students are to Produce a piece of music (appropriate to a second-year tertiary standard) that accompanies a self chosen video excerpt such as a trailer, promotional video, or scene from a video game, movie, or television program.

The piece must make use of microphone captured material, programmed MIDI parts, and third party samples or loops (referenced appropriately). The finished work should clearly demonstrate an ability to create a tempo map, use time-stretching or elastic audio on sampled material where required, record and edit MIDI and audio material as appropriate, and to synchronise the visual material within the DAW.

The final creative work must be accompanied by a reflective and explanatory report (500 words) that discusses any barriers and obstacles encountered during the production, along with a proposal that recommends a software and hardware configuration that best fits the needs of future creative practice.

Assessment Three - Marking Criteria: Creative Work and written Report

HD 85 - 100

Work of exceptional quality, which demonstrates comprehensive understanding of the subject matter, mastery of relevant skills, sophisticated or original critical and conceptual analysis and interpretation, and outstanding quality in clarity, precision and presentation of work.

D 75 - 84

Work of superior quality, which demonstrates a thorough knowledge and understanding of the subject matter, proficiency in relevant skills, and analytical and conceptual ability of a high order

C65 - 74

Work of good quality, which displays a good understanding of the subject matter and a sound grasp of relevant skills

P 50 - 64

Work of satisfactory quality, which displays an adequate understanding of most of the subject matter and a sufficient grasp of relevant skills

N0 - 49

Work which is incomplete or displays an inadequate understanding of the subject matter or an inadequate grasp of relevant skills

Prescribed and Recommended Readings

Relevant readings will be available on LMS on a weekly basis

All written work is to be cited in APA author-date style:

http://www.bibme.org/citation-guide/apa/

Course Outcomes

#	Course Learning Outcomes On completion of the course the student should be able to demonstrate:	Unit Learning Outcomes	Assessments
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1	A broad knowledge of the applied, theoretical and historical basis of the discipline	1, 2, 3	1, 2, 3 ,
2	A depth of disciplinary knowledge in a professionally applicable specialisation	1, 2, 3	1, 2
3	An understanding of the processes of musical scholarship and research	2, 4	3
4	The ability to work both independently and collaboratively in diverse and complex musical settings	1, 2, 3	1, 2, 3
5	Effective written, verbal and interpersonal communication skills	2, 4	3
6	Critical thinking and analytical skills appropriate to a range of contexts including further study	2, 4	3

#	Course Learning Outcomes On completion of the course the student should be able to demonstrate:	Unit Learning Outcomes	Assessments
7	The ability to apply specific musical skills to a wide range of professional contexts	1, 2	1, 2, 3
8	The capacity to apply technological and creative solutions to contemporary musical practices	1, 2, 3	1, 2, 3
9	The ability to incorporate knowledge from the business and legal fields to a portfolio career in the music profession.	N/A	N/A

Graduate Attributes

#	Graduate Attribute Successful completion of this unit will contribute to the attainment of the following graduate attributes:	Unit Learning Outcomes	Course Learning Outcomes	Assessments
1	Deep disciplinary knowledge	1	1, 2	1, 2, 3
2	The ability to apply knowledge and skills in innovative ways	1, 2	3,4, 8	1, 2, 3
3	A commitment to lifelong learning	2, 4	1, 6	3
4	Effective communication skills for diverse contexts	2, 4	5	3
5	The capacity to work independently and collaboratively	1, 3,	4	1, 2, 3