

BSc (HONS) AUDIO SOFTWARE ENGINEERING

2 Year Accelerated & 3 Year Courses Available



Why choose this course?

At SAE, you'll learn how audio tools, effects, and plug-ins work at a deep technical level – developing advanced digital signal processing and C++ programming skills, and building plug-ins, audio tools, and interactive systems from scratch. The course moves from visual programming tools including Max MSP and Pure Data into fully coded plug-ins, embedded systems, and professional coding environments, with Pro Tools running throughout. You'll work on projects connected to real audio companies including Solid State Logic, learning to design, test, and deliver software used across music, film, and games production.

Graduate with a portfolio of working prototypes and audio software that shows employers exactly what you can do.

Industry relevance

The demand for engineers who can bridge the gap between audio and software development is growing rapidly across music technology, games, broadcast, and interactive media. At SAE, you'll collaborate with industry partners such as Solid State Logic on project-driven briefs that mirror real commercial environments - developing rare technical skills, strong industry knowledge, and the creative problem-solving ability that sets audio software engineers apart in a competitive field.

Career outcomes

Graduates can progress into roles including Audio Software Developer, DSP Engineer, Plug-in Developer, Audio Systems Programmer, Interactive Media Developer, Technical Audio Designer, Software Tools Specialist, and Creative Technologist - with skills that apply across games, media, broadcast, music technology, and digital product development.

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MODULE BREAKDOWN

The purpose of this module breakdown is to provide a concise summary of the main topics covered on the Audio Software Engineering programme offered at SAE.

Trimester 1/Semester 1

To begin your degree, you'll develop essential technical skills across audio production and software engineering, alongside the knowledge required to collaborate with other creative media students and professionals.

ASE (T1) - Principles of Audio

In this module, you'll explore the core principles of sound as a physical and creative medium, building a strong foundation in audio production and engineering techniques. You'll gain hands-on experience using DAWs for recording and editing, while developing an understanding of how sound behaves across different environments and systems.

Topics include:

- Sound theory
- Decibels and signal flow
- Acoustics and psychoacoustics
- Electronics and audio systems
- Microphones and loudspeakers
- Digital Audio Workstations (DAWs)
- Audio signal routing
- Equalisation, effects and dynamics

ASE (T1) - C++ Programming

Across this module, you'll develop a strong foundation in C++, one of the key programming languages used in audio software development. You'll explore programming concepts through practical audio projects, building computational thinking and problem-solving skills while learning how software is structured and developed.

Topics include:

- Setting up development environments (IDEs)
- Variables and data types
- Functions, classes and objects
- Pointers and memory concepts
- Structs, enums and casting
- Console application development



Trimester 2/Semester 2

This trimester, you'll build on your foundational knowledge by developing your creative and technical skills across sound design and audio software development. You'll explore how sound is created and manipulated, while learning how to apply programming techniques to real-world audio applications.



ASE (T2) - Designing Sound

In this module, you'll analyse and reconstruct sound using synthesis and sampling techniques, developing your understanding of sound design and creative audio workflows.

You'll also explore graphical programming environments and experiment with prototyping digital audio tools and instruments.

Topics include:

- Synthesis and sampling
- Sound design techniques
- Critical listening
- Graphical programming (Max/MSP, Pure Data)
- Audio prototyping

ASE (T2) - Audio Signal Processing

In this module, you'll explore the theory and practical application of digital signal processing (DSP) for audio.

You'll develop your own audio effects and software plugins, gaining hands-on experience with industry-standard tools and frameworks.

Topics include:

- Developing audio effects
 - Creating processing plugins
 - Digital signal processing fundamentals
 - JUCE framework
 - Testing, evaluation and iteration of audio processing tools
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Trimester 3/Semester 3

In Trimester 3, you'll be introduced to the professional working environment through a series of real-world project briefs. Our Creative Studio approach allows you to engage in authentic assessment activities that reflect current industry practices, while collaborating across disciplines.

ASE (T3) - Creative Studio 1: Overview

In this module, you'll work on your first collaborative interdisciplinary project, applying your skills in audio software development within a team environment. You'll explore audio implementation, programming and sound design while working with students from other creative disciplines.

Topics may include:

- Sound design and editing
- Foley recording
- Audio tool development
- Immersive audio
- Game audio implementation and programming



Trimester 4/Semester 4

This trimester focuses on developing your collaborative, technical and professional skills through more advanced project work. You'll explore industry workflows, combining creative development with business awareness to build portfolio-ready outcomes.



ASE (T4) - Creative Studio 2: Overview

In this module, you'll expand your collaborative work, developing a larger-scale software or audio application project. You'll combine advanced programming and audio knowledge with business and entrepreneurial thinking to create a professional creative product.

Topics may include:

- Advanced audio tools and techniques
- Version control and collaboration
- Software deployment
- Performance analysis
- Business planning
- Marketing and audience analysis

Trimester 5/Semester 5

As you approach the final stage of your degree, you'll begin to specialise within your chosen area of audio software engineering, refining your skills through self-directed and industry-focused projects.

ASE (T5) - Advanced Specialised Project

In this module, you'll undertake a complex self-directed project in your chosen area of specialism, developing advanced technical and creative skills. You may work on live briefs or industry-led projects, building your portfolio and establishing professional connections.

Topics may include:

- Audio software development
 - Game audio programming
 - Immersive audio systems
 - AI
 - Audio networking
 - Embedded systems
 - Industry workflows
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ASE (T5) - Research and Development

In this module, you'll prepare for your final Major Project by developing your research, planning and professional skills.

You'll create a project proposal and build a deeper understanding of your chosen specialism, supporting progression into industry or postgraduate study.





Trimester 6/Semester 6

The final module of your degree allows you to demonstrate the full range of skills you've developed through a large-scale, advanced-level project.

ASE (T6) – Major Project

You'll complete a Major Project in your chosen area of audio software engineering, showcasing your creative, technical and professional abilities.

This self-directed project will form a key part of your portfolio, helping you take the next step into the industry.



WANT TO KNOW ABOUT AUDIO AT SAE?

If you need help at any point during your application process, our friendly Admissions Team are here to help at every step of the way.

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**READY FOR THE NEXT STEP?
APPLY TODAY!**

Scan the QR code to begin your application for our BSc (Hons) Audio Software Engineering at SAE.