American Open University Nigeria

UNDERGRADUATE PROGRAM | COLLEGE OF TECHNOLOGY

Bachelor of Science in Software Engineering

American Open University Nigeria

Program Info

The Bachelor of Science in Software Engineering is a rigorous program focused on the disciplined principles of designing, building, testing, and deploying robust and scalable software solutions. This program goes beyond just coding to instill a deep understanding of software architecture, development methodologies, and collaborative teamwork, preparing graduates to engineer high-quality software for a global market. The program provides a comprehensive foundation in software engineering, allowing students to specialize through advanced elective courses and capstone projects in areas such as Enterprise Systems, Full-Stack Development, and Cloud-Native Applications.

4 Years	BSc Degree	Hybrid	AI-Ready
Duration	Credential	Delivery	Specialization

SPECIALIZATION FOCUS

Enterprise Software Engineers | Full-Stack Developers | Cloud-Native Developers | System Architects

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Program Objectives

The Bachelor of Science in Software Engineering program aims to:

Instill the principles of disciplined software engineering, including requirements analysis, design patterns, and testing.

Develop advanced proficiency in modern programming languages, frameworks, and development platforms.

Foster the collaborative skills necessary to thrive in agile development environments.

Prepare graduates for specialized, high-impact careers in the competitive global technology industry.

Expected Program-Level Outcomes

EDUCATE

Students will acquire a deep understanding of computer science fundamentals, including algorithms, data structures, and software architecture.

DEVELOP

Students will demonstrate proficiency in the entire software development lifecycle, from ideation to deployment and maintenance.

GROW

Students will be able to apply engineering principles to build complex applications and work effectively in professional development teams.

EMPOWER

Students will be prepared to architect and lead the development of innovative software solutions in their chosen domain.

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Program Pathway for B.Sc. Software Engineering Advance Stage 1

Session	Course Code	Course Title	Units	Duration
Fall (2 Sections) 12 Credit units				
Section 1 (6 Credits)	AGC 200	Foundations of Academic Writing	3	8 weeks
	ATC 200	Information Systems Design Fundamentals	3	8 weeks
Section 2 (6 Credits)	ATC 440	Fundamentals of Application Development	3	8 weeks
	ATC 202	Foundations of AI Deployment (Claude AI)	3	8 weeks
Break				
Spring (2 Sections) 12 Credit units				
Section 1 (6 Credits)	ATC 441	UX/UI Design (Google)	3	8 weeks
	ATC 401	Enterprise Resource Planning	3	8 weeks
Section 2 (6 Credits)	BIT 322	Human Computer Interaction	3	8 weeks
	ATC 402	Enterprise Systems Integration: Architectures, Technologies, and Applications	3	8 weeks
Break				
Summer (1 Section) 6 Credit units				
Section 1 (6 Credits)	ATC 403	Optimizing Business Performance with Open-Source Software	3	8 weeks
	ATC 404	Information Technology Project Management	3	8 weeks
Break				
Fall (2 Sections) 12 Credit Units				
Section 1 (6 Credits)	ATC 442	Software Engineering Tools and Techniques	3	8 weeks
	AGC 300	Information Technology Research Methods	3	8 weeks
Section 2 (6 Credits)	SEN 410	Software Architecture and Design	3	8 weeks
	ATC 405	Cloud Infrastructure and Databases	3	8 weeks
Break				

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Program Pathway for B.Sc. Software Engineering Advance Stage 1

Session	Course Code	Course Title	Units	Duration
Spring(2 Sections) 12 Credit Units				
Section 1 (6 Credits)	ATC 407	IT Automation with Python I	3	8 weeks
	SEN 304	Software Testing	3	8 weeks
Section 2 (6 Credits)	ATC 408	IT Automation with Python II	3	8 weeks
	SEN 497	Software Engineering Capstone Project I	3	8 weeks
Break				
Summer (1 Section) 6 Credit Units				
Section 1 (6 Credits)	ATC 445	AI-Powered Software Engineering	3	8 weeks
	SEN 498	Software Engineering Capstone Project II	3	8 weeks
		TOTAL UNITS	**60**	

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Program Pathway for B.Sc. Software Engineering Advance Stage 2

Session	Course Code	Course Title	Units	Duration
Fall (2 Sections) 12 Credit units				
Section 1 (6 Credits)	AGC 200	Foundations of Academic Writing	3	8 weeks
	ATC 200	Information Systems Design Fundamentals	3	8 weeks
Section 2 (6 Credits)	ATC 405	Information Systems Project Management	3	8 weeks
	AGC 300	Information Technology Research Methods	3	8 weeks
Break				
Spring (2 Sections) 12 Credit units				
Section 1 (6 Credits)	ATC 440	Fundamentals of Application Development	3	8 weeks
	ATC 441	UX/UI Design	3	8 weeks
Section 2 (6 Credits)	ATC 442	Software Engineering Tools and Techniques	3	8 weeks
	SEN 410	Software Architecture and Design	3	8 weeks
Break				
Fall (2 Sections) 12 Credit Units				
Section 1 (6 Credits)	ATC 445	AI-Powered Software Engineering	3	8 weeks
	ATC 497	Software Engineering Capstone Project I	3	8 weeks
Section 2 (6 Credits)	ATC 498	Software Engineering Capstone Project II	3	8 weeks
		Total	**33**	

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What You Will Learn

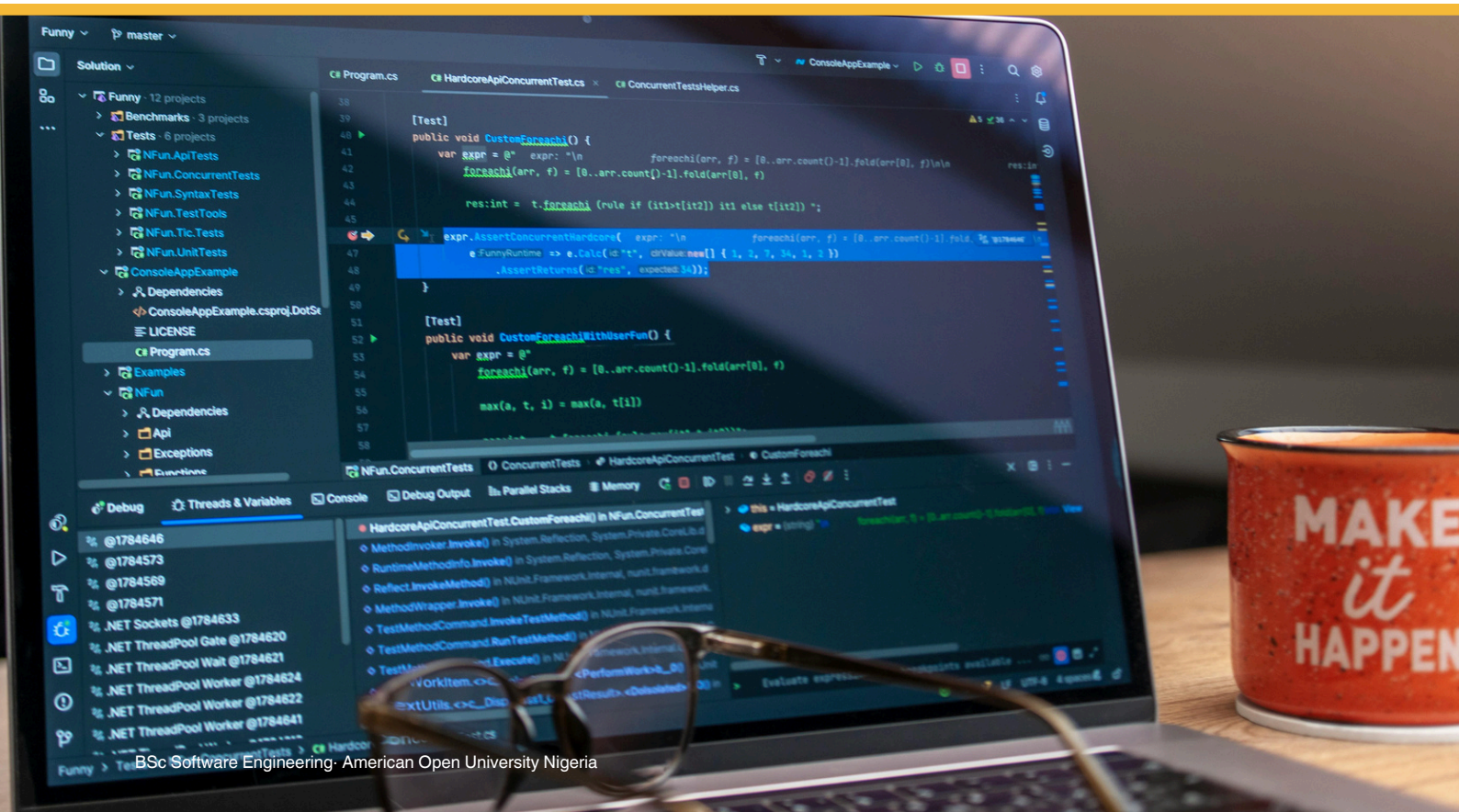
Students will build a comprehensive portfolio of skills, moving from foundational theory to specialized, real-world application.

1. **Core Engineering Principles:**
Master the fundamentals of computer science, including data structures, algorithms, object-oriented design, and software architecture.

2. **Modern Development Practices:**
Become proficient in the tools and methodologies that drive professional software teams, including Agile/Scrum, version control with Git, and CI/CD pipelines.

3. **Languages, Frameworks, and Platforms:**
Gain hands-on experience with in-demand programming languages (e.g., Python, Java, C#, JavaScript) and industry-standard frameworks (e.g., .NET, React, Node.js).

4. **Specialized Application Development:**
Dive deep into advanced electives, learning enterprise integration patterns, cloud-native development, or full-stack application design.



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Who You Will Become

Graduates of this program are prepared to be:

Enterprise Software Engineers

who build the large-scale, reliable, and secure systems that run major corporations.

Full-Stack Developers

who create seamless web and mobile experiences from the database to the user interface.

Cloud-Native Developers

who build and deploy scalable applications on platforms like AWS, Azure, and Google Cloud.

System Architects

who can design the high-level blueprint for complex software applications.

EMPLOYMENT LANDSCAPE

Where You Will Work

Industries:

Software as a Service (SaaS), FinTech, Enterprise IT, Cloud Computing.

Certifications:

Cisco DevNet Associate, AWS Certified Developer – Associate, Oracle Certified Professional (Java).

Career Trajectory:

Software Engineer, Backend Developer, Full-Stack Developer, DevOps Engineer, Solutions Architect.

Ready to Build the Future?

Apply now and join a program designed for the next generation of AI infrastructure leaders.

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