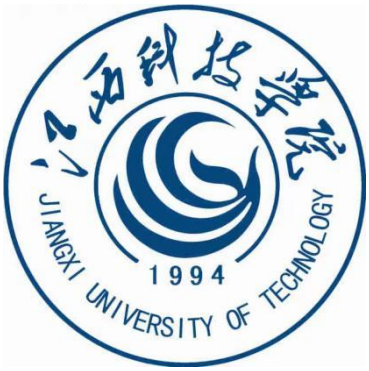

Richmond
American University
London

UK-validated Chinese award

BSc Computer Science and Technology

Programme Specification

2023-2024

Contents

1. INTRODUCTION

This document describes the **BSc Computer Science and Technology** awarded by the University of Richmond, American International University in London, using the agreement required by the Higher Education Qualification Framework in England, Wales and Northern Ireland (QAA, 2008).

The programme is devised, delivered and assessed by Jiangxi University of Technology, and validated for a UK award by Richmond, The American International University in London. The programme is delivered by Jiangxi University of Technology, in China, to its own students. Richmond, The American International University in London is responsible for the standard and issuance of UK awards and quality assurance and enhancement of the validated programmes at Jiangxi University of Technology.

The degree is delivered within the framework set by policies and regulations of *National Standards for Teaching Quality of Undergraduate Majors in General Colleges and Universities of China*. Typically, students complete 53 separate courses over the programme which takes 4 years. Normally, each course carries 1-4 Chinese academic credits and the relationship between credit hours and credits of various types of courses is as follows:
Theoretical courses: 16 credit hours = 1 credit
Experimental/Practical courses: 16 credit hours = 1 credit
Practical Learning Arrangements: 1 week= 1 credit

The degrees are also articulated in terms of UK Regulatory Frameworks, chiefly the FHEQ and the Higher Education Credit Framework for England. Each course has been assigned to an appropriate level on the FHEQ, based on the course's learning outcomes and assessment strategies (note that the courses comprising the first year of the 4-year Chinese undergraduate degree are normally at RQF Level 3). Chinese undergraduate credit can generally be translated to ECTS and UK CATS credits in the following manner: 1 Chinese credit = 2 ECTS credits = 4 UK CATS credits. So, a Chinese degree of 120 credits would translate as 240 ECTS credits and 480 UK CATS credits (with a minimum of 360 UK CATS credits at Levels 4-6 on the FHEQ).

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each course can be found in course specification documents and syllabi.

The accuracy of the information contained in this document is reviewed by the University.

2. OVERVIEW

Programme/award title(s)	BSc (Hons) Computer Science and Technology
Teaching Institution	Jiangxi University of Technology
Awarding Institution	Richmond, the American International University in London
Date of last validation	June 2022
Next revalidation	2027
Credit points for the award	412 UK CATS credits (total credits for L4-L6 412)
Programme start date	September 1st, 2023
Underpinning subject benchmark(s)	QAA Computing Benchmark Statement https://www.qaa.ac.uk/quality-code/subject-benchmark-statements/computing
Professional/statutory recognition	N/A
Language of Study	Chinese
Language of Assessment	Chinese
Duration of the programme for each mode of study (P/T, FT, DL)	FT
Date of production/revision of this specification	October 2023 (See chart at the end of this document for list of revisions)

3. ABOUT THE PROGRAMME

The BSc Computer Science and Technology at JXUT is a four-year programme. The key outcomes are delivered through courses, assessed works, examination and practice. On the completion of the programme, students are expected to understand the development of computer science and technology and have application-oriented skills.

The main courses are as follows: Data Communication and Network, Fundamental of Programming Design, Introduction to Programming, Data Structure and Algorithm (Theoretical), System Analysis and Design, Programming Design and Development, Principles and Application of Database System (Theoretical), Operating System, etc.

4. MISSION

The students in this programme will be educated to have humanities and social science literacy, social responsibility, professional ethics, innovation and entrepreneurship awareness, teamwork spirit and international vision. They will have the awareness and ability of independent learning and lifelong learning, and be able to use mathematics, natural sciences, engineering fundamental knowledge, basic theories of computer science and technology and professional skills to analyze and solve complex engineering problems. They can be engaged in computer hardware and software system design, research and development, project implementation, maintenance, application and management work, and can adapt to technological progress and social development.

5. PROGRAMME STRUCTURE

In order to meet the requirements of the UK award, students must:

- satisfactorily complete ALL required courses listed below at each FHEQ level;
- satisfactorily complete the minimum number of optional courses listed below, at each FHEQ Level;
- earn a minimum of 120 UK credits at each of the levels 4-6 (360 UK credits total) *, and;
- achieve a minimum UKGPA of 1.850.

*Please note, some programmes require a higher minimum UK credit threshold at each FHEQ level, please refer to the structure below for the programme.
For more information about Richmond's UKGPA calculations and UK Degree Classification boundaries, please refer to JXUT's dedicated UK-award policy pages.

Black = Major compulsory courses
Blue = Gen Ed / Common Foundation courses
Green = Elective courses

Programme Structure Grids in Levels

RQF Level 3				
RQF Level	**Course Code**	**Course Title**	**CREDITS (China)**	**CREDITS (UK)**
3	104010101372	Career Planning	1	4
3	106020101077	College English (1)	6	24
3	113010101028	Higher Mathematics A (1)	4	16
3	102010201502	Foundations of Information Systems	4	16
3	113010101026	Higher Mathematics A (2)	4	16
3	102020201430	Fundamentals of Programming	3	12
3	102040401216	Professional Skills for IT	1	4
4	102010201507	Data Communications and Networks	4	16
RQF Level 3 Credit Totals			**27**	**108**

FHEQ Level 4				
FHEQ Level	**Course Code**	**Course Title**	**CREDITS (China)**	**CREDITS (UK)**
4	106020101075	College English (2)	6	24
4	105010201741	Professional Communication Skills	4	16
4	113010201018	Linear Algebra A (Comp Sci)	2	8
4	102010201503	Discrete Mathematics for IT	4	16
4	102020301404	Principles of Computer Systems	3	12
4	102020301407	Operating Systems	3	12
4	102010201701	Introduction to Programming	4	16
4	102020201425	Digital Technology and Logic Circuits	3	12
4	113010201019	Probability Theory and Mathematical Statistics	2	8
4	102020201708	Data Structures and Algorithms (Theoretical)	3	12
4	102040401211	Data Structures and Algorithms (Practical)	1	4
FHEQ Level 4 Credit Totals			**35**	**140**

FHEQ Level 5				
FHEQ Level	**Course Code**	**Course Title**	**CREDITS (China)**	**CREDITS (UK)**
5	106020101073	College English (3)	6	24
5	106020101071	College English (4)	6	24

5	113010101035	Innovation Education	2	8
5	102010301490	Systems Analysis and Design	4	16
5	102040401224	Computer Networks	1	4
5	102010301498	Object Oriented Programming and Design	4	16
5	102020301709	Principles and Applications of Database Systems (Theoretical)	3	12
5	102020303388	Java Web Programming Technology	3	12
5	102020304303	Programming in Python	3	12
5	102040401210	Principles and Applications of Database Systems (Practical)	1	4
FHEQ Level 5 Credit Totals			**33**	**132**

FHEQ Level 6				
FHEQ Level	**Course Code**	**Course Title**	**CREDITS (China)**	**CREDITS (UK)**
6	104010101374	Employment Guidance	1	4
6	104010101375	Entrepreneurship Education	1	4
6	102020303393	App Program Development	3	12
6	102020303384	Java EE Advanced Technology	3	12
6	102040401219	Computer Applications Practical Project	1	4
6	119040401008	Specialized Practice	8	32
6	119040401010	Undergraduate Practice	2	8
6	119040401011	Undergraduate Dissertation (Design)	8	32
Plus 2 of the following Major electives			**6**	24
6	102030304248	Web Design and Development	3	
6	102010304451	Numerical Analysis	3	
6	102020304321	Computer Graphics	3	
6	102020304328	Principles of Compilation	3	
6	102020304543	Computer Architecture	3	
6	102020304542	Signals and Systems	3	
Plus 1 of the following Major electives			**2**	8
6	102010304456	Software Design Patterns	2	
6	102020304309	Cloud Computing Technology and Applications	3	
6	102030304232	Intelligent Data Processing Technology	2	
6	102020304544	Embedded Systems	3	
FHEQ Level 6 Credit Totals			**35**	**140**
Total credits for UK degree (FHEQ level 4-6)			**103**	**412**

6. PROGRAMME OUTCOMES

Knowledge and Understanding (A)

A1 Engineering knowledge: able to apply mathematics, natural sciences, engineering foundations and professional knowledge to analyze and solve complex engineering problems in the field of computer science and technology
A1(i) Correctly understand the basic knowledge and concepts of mathematics, natural sciences, engineering and calculations, as well as their practical application in engineering
A1(ii) Demonstrate the basic engineering knowledge, and be able to apply its basic concepts, basic theories and basic methods to solve practical problems
A1(iii) Demonstrate the basic knowledge of computer science, and be able to analyze and design software and hardware for computer engineering problems
A1(iv) Demonstrate computer engineering professional knowledge, and be able to comprehensively apply relevant knowledge to solve complex engineering problems in the field of computer engineering

A2 Problem analysis: Able to apply the basic principles of mathematics, natural sciences and computer science, identify and express complex engineering problems in the computer field, and obtain effective conclusions through literature research and analysis
A2(i) Use the basic principles of computer systems, form professional ideas, understand the development trends and current situation of the profession, and adapt to changes in the environment and technological progress
A2(ii) Use basic principles of mathematics, natural science and computer science to identify, describe and express complex engineering problems
A2(iii) Able to analyze complex engineering problems through literature research and obtain effective conclusions

Cognitive Skills (B)

B1 Engineering and society: Able to conduct reasonable analysis based on the background knowledge of computer engineering related fields, evaluate the impact of professional engineering practices and complex engineering problem solutions on society, health, safety, law and culture, and understand the responsibilities that should be undertaken
B1(i) Understand the policies, regulations, technical standards, and industry norms in the field of computer engineering technology, and follow them in engineering practice
B1(ii) Have professional judgment, analysis, and evaluation capabilities on the social impact of computer engineering practice
B1(iii) Have good professional ethics and a high sense of social responsibility, and be able to understand and assume corresponding responsibilities in the practice of computer engineering

B2 Environment and sustainable development: Familiar with the guidelines, policies, laws and regulations of environmental protection and sustainable development, and have basic quality, environment, safety and legal awareness
B2(i) Be familiar with the guidelines, policies, laws and regulations in environmental protection and sustainable development

B2(ii) Have basic quality, environment, safety and legal awareness in the process of computer engineering project design, implementation, and operation management

B3 Professional standards: Have humanities and social science literacy and a sense of social responsibility, understand and abide by engineering professional ethics and standards, and perform responsibilities
B3(i) Be able to establish a correct world outlook, outlook on life, and values, and possess good humanities and social science literacy
B3(ii) Be able to have a sense of social responsibility and civic engagement
B3(iii) Be able to possess professional qualities and professional ethics in computer science and technology, and perform responsibilities

B4 Individuals and teams: Be able to assume the roles of individuals, team members and leaders in a computer engineering project team under a multidisciplinary background
B4(i) Understand the composition of the team in a multidisciplinary context and the responsibilities of members in different roles
B4(ii) Able to assume the roles of individuals, team members and leaders in the team, and have a good team spirit

Practical and/or professional skills (C)

C1 Use modern tools: be able to develop and select appropriate computer software and hardware engineering tools and technologies, perform systematic analysis, modeling, simulation and prediction of complex engineering problems in the field of computer science and technology, and understand their limitations
C1(i) Be able to identify and evaluate current popular and emerging technologies, and be able to evaluate their applicability according to user needs
C1(ii) Be able to develop, select and use appropriate modern engineering tools and information technology tools to complete the analysis and modeling of complex computer engineering problems
C1(iii) Able to understand the limitations of modern tools in the prediction and simulation of complex engineering problems

C2 Communication: Ability to effectively communicate with industry peers and the public on complex computer engineering issues, including writing reports and design manuscripts, making statements, expressing clearly or responding to instructions. And have an international perspective, with ability to communicate and exchange in a cross-cultural context
C2(i) Good English reading skill, communication ability and writing ability, and professional foreign language ability to track the development of new technology
C2(ii) Understand the basic composition and requirements of computer engineering and related professional technical documents, and have the ability to write technical documents and basic skills in technical speeches

C2(iii) Have a basic understanding of the international context in the field of computer engineering technology and related industries, and be able to communicate and communicate on complex engineering issues in the field of computer engineering in a cross-cultural context

C3 Project Management: Understand and master the principles of complex computer engineering project management and economic decision-making methods, and be able to apply it in a multi-disciplinary environment, and have computer engineering project management capabilities
C3(i) Understand and master engineering management principles and economic decision-making methods
C3(ii) Ability to use appropriate project management tools and models to manage complex computer engineering projects, and be able to practice in a multidisciplinary environment

Key Skills (D)

D1 Design/Develop solutions: Design and optimize solutions for complex engineering problems in the field of computer science and technology, develop systems and unit modules that meet the needs, and reflect the sense of innovation in all aspects, considering society, health, safety, law, and cultural and environmental factors
D1(i) Demonstrate the professional basic knowledge to solve complex engineering problems in the field of computer science and technology
D1(ii) Have the basic ability to design and optimize information system engineering schemes, and be able to design solutions to complex engineering problems
D1(iii) Be able to use theory and technical means to solve practical problems, design/develop systems or modules that meet user needs, and reflect the sense of innovation in design/development
D1(iv) Be able to comprehensively consider social, health, safety, legal, cultural and environmental factors in design/development

D2 Research: Based on scientific principles and methods, research on complex engineering problems in the field of computer science and technology, design feasible experimental schemes, and comprehensively analyze and interpret the results to obtain reasonable and effective conclusions
D2(i) Demonstrate the basic methods and processes of engineering problem research
D2(ii) Be able to use the principles and methods of computer science to carry out research and practice on engineering problems in the computer field, design and optimize experimental programs
D2(iii) Use modern development tools, verify the correctness of the experimental plan and analyze the experimental results

D3 Lifelong learning: have the awareness of independent learning, lifelong learning, innovation and entrepreneurship, and have the ability to continue learning and adapt to social and technological development
D3(i) Cultivate the awareness of lifelong learning, understand a variety of theoretical and practical learning methods, and have good information acquisition capabilities and self-learning capabilities

D3(ii) Cultivate the awareness of innovation and entrepreneurship, and reflect innovation and entrepreneurial thinking in engineering projects

7. TEACHING, LEARNING, AND ASSESSMENT

Teaching Strategy

The BSc Computer Science and Technology requires all students to actively participate in learning, conscientiously study, and strive to explore. The precise approach will vary from course to course, depending on the learning outcomes relevant to each class.

The generic components of our teaching and learning strategy normally involves a variety of approaches and include delivering many of the following:

- Regular use of formal lecture sessions in all courses
- Occasional workshops and seminars in some courses
- Regular use of individual and/or team-based projects in all courses
- Regular use of self-directed and directed reading in all courses
- Peer-tutoring led by advanced students in many courses
- Use of audio-visual and library resources in some courses
- Assist teaching through e-learning platform

Their knowledge is acquired through

- Course teaching
- Electronic platforms assist learning
- Bibliography reading
- Practical training in Laboratory

Their cognitive skills are developed through

- Conducting research
- Making presentations and preparing other assessments
- Students' communication and discussion after class

Their practical skills are gained through

- Applying theory to practice encountered during internship
- Using information technology to retrieve and manipulate data
- Completing graduation thesis and graduation practice

Their key skills are gained through

- Using appropriate language and communication skills
- Independent learning

Assessment Strategy

In general, our assessment strategies are in accordance with *Regulations on Examination Management of Jiangxi University of Technology* and *Measures for Evaluation and Recording of Score of General Performance at JXUT*.

Further details may be found at:

Appendix 1 - 7.1 Regulations on Examination Management of Jiangxi University of Technology

Appendix 2 - 7.2 Measures for Evaluation and Recording of Score of General Performance at JXUT

For students with SENDs, please refer to the syllabus for more information about SEND concessions.

8. ENTRY REQUIREMENTS

Admissions

Students are required to take part in the NCEE (Gaokao) organized by the Ministry of Education and apply for our programme. JXUT recruits students across the country in accordance with the provincial threshold scores of second-tier universities as the basis for admission. The upper limit of the total admissions is determined by the Enrollment Plan approved by the provincial government.

9. EXIT AWARD REQUIREMENTS

According to the *Implementation Rules for Student Status Management of JXUT*, students who drop out after study for one academic year or more will be granted a non-graduation Study Certificate. Students who withdraw in less than one academic year of study will be given Learning Experience Certificates.
Further details may be found at: Implementation Rules for Student Status Management of Jiangxi University of Technology.

10. STUDENT SUPPORT AND GUIDANCE

There is a range of student support and guidance, for both academic and general wellbeing, available to students. This is accomplished through a range of work-streams and services which positively impact learning as well as the total student life experience.

There are 15 teaching buildings and 34 dormitory buildings in the University, with about 9,000 dormitories. There are 328 classrooms of various types with a total seating capacity of 33,194, and a total of 230 experimental and practical training rooms. Students can study in the

teaching area, listen to lectures, perform experimental (training) classes and carry out academic exchanges and cultural and recreational activities. There are 44 outdoor sports grounds and 22 sports support facilities on campus, with a total area of 113,000 square meters. There is also one large sportsground and a gymnasium building. There is also a modernized library that is a total area of 33,000 square meters. The library provides a total of 3,200 self-study seats for students. In addition to normal working days, it is also open to students during non-working hours. The opening hours of the library are from 8:00 a.m. to 22:30 p.m. from Monday to Sunday.

The University has set up a Student Affairs Office which is responsible for daily management and service of students. The University arranges a counselor for each class. The University has also set up a Student Financial Aid Management Center which deals with student loans and scholarships, in order to ensure that students enjoy equal access to education. The mental health education center disseminates mental health knowledge to students, provides psychological counseling and offers physical and mental health education courses.
Related web links will be provided in the future.

11. PLACEMENT

The University offers a formal mechanism through which students may receive work-placement opportunities. These placements are supervised under the University's Internship Leadership Office and Teaching Affairs Office and executed by each secondary school respectively.
These placements are supervised, career-related work experiences combined with reflective, academic study that help students apply theoretical knowledge in the workplace. There are two modes of internships: designated internship in companies with partnership of the University and individual internship in workplaces found by students themselves.
Further details may be found in *Internship Notice* .

Admissions and Employment Office of JXUT provides employment guidance services for students, organizes large-scale enterprise recruitment fairs regularly every year and offers courses like Career Planning and Employment Guidance. Secondary schools organize relevant job fairs for students before graduation, providing them with information consultation, resume development and other services.

12. STUDY ABROAD

The Study Aboard option is not available for this programme at this moment, but we will periodically monitor and listen to students' requirements and set up relevant projects or opportunities in the future as appropriate.

13. REGULATORY FRAMEWORK

The bachelor's degree in computer science and Technology is operated under the policy and regulatory of *National Standards for Teaching Quality of Undergraduate Majors in General Colleges and Universities*.

Further details may be found at: https://jwc.jxut.edu.cn/info/1745/8628.htm (No English version available. These materials have been reviewed by bilingual staff at Richmond to verify the compliance of this programme within JXUT's regulations and that of the Chinese Ministry of Education.)

The BSc (Hons) Computer Science is operated under the policy and regulatory frameworks of Richmond the American International University in London, the Framework of Higher Education Qualifications, and the UK Quality Code for Higher Education.

Also key to the background for this description are the following documents:

- QAA (2018). The Revised UK Quality Code for Higher Education. (www.qaa.ac.uk)
- QAA (2008). Higher Education Credit Framework for England: guidance on academic credit arrangements in Higher Education in England.
- SEEC (2016). Credit Level Descriptors for Higher Education. Southern England Consortium for Credit Accumulation and Transfer (www.seec.org.uk).

Ensuring and Enhancing the Quality of the Programme

The University has several methods for evaluating and improving the quality and standards of its provision. These include:

- External examiners
- Internal Moderation
- Teaching Material Review Conducted by Teaching Supervision Office
- Classroom Observations and Peer-to-peer Evaluations
- Student Feedback and Student Evaluation
- Student Forum
- Course Evaluations
- Student feedback staff
- New Teachers Training
- President Reception Days
- Feedback from employers
- Assessments of Ministry of Education (every 5 years)

APPENDIX 1 Curriculum Map

	Knowledge and Understanding							Cognitive Skills									Prof Skills								Key Skills								
	A1				A2			B1			B2		B3			B4		C1			C2			C3		D1				D2			D3	
	i	ii	iii	iv	i	ii	iii	i	ii	iii	i	ii	i	ii	iii	i	ii	i	ii	iii	i	ii	iii	i	ii	iii	iv	i	ii	iii	i	ii
Career Planning														√	√																		
College English (1)																					√											√	
Higher Mathematics A (1)	√	√																															
Higher Mathematics A (2)	√	√																															
Foundations of Information Systems			√	√												√									√					√			
Data Communications and Networks			√																						√								
Fundamentals of Programming			√																						√					√			

Professional Skills for IT								√															√	√								
College English (2)																					√										√	
Professional Communication Skills		√								√																						
Linear Algebra (Comp Sci) A	√	√				√																										
Discrete Mathematics for IT	√	√				√																										
Operating Systems		√																	√						√							
Principles of Computer Systems		√							√										√						√							
Introduction to Programming			√																						√					√		
Digital Technology and Logic Circuits	√							√										√							√							

Probability Theory and Mathematical Statistics	√	√				√							√	√																	
Data Structures and Algorithms (Theoretical)			√																						√				√		
Data Structures and Algorithms (Practical)		√														√			√							√	√	√			
College English (3)																			√											√	
College English (4)																			√											√	
Innovation Education															√	√														√	√
Systems Analysis and Design		√															√						√		√						
Computer Networks		√						√							√											√	√	√			
Object Oriented		√																√							√						

Programming and Design																															
Principle and Application of Database Systems (Theoretical)		√																	√						√						
Java Web Programming Technology		√							√										√												
Principles and application of Database Systems (Practical)		√													√											√	√	√			
Programming in Python		√																	√												
Employment Guidance													√		√					√											

Entrepreneurship Education													√		√									√								
App Program Development		√							√										√												
Java EE Advanced Technology		√																√													
Computer Applications Practical Project		√														√			√					√		√	√	√				
Specialized Practice								√											√			√		√	√						
Undergraduate Practice								√														√		√	√						
Undergraduate Dissertation (Design)						√				√		√		√									√				√			√	√
Web Design and Development		√																													

Numerical Analysis	√																		√													
Computer Graphics		√			√			√																								
Principles of Compilation		√																	√													
Computer Architecture		√																	√													
Signals and Systems		√																	√													
Software Design Patterns		√																	√									√				
Cloud Computing Technology and Applications		√																	√													
Intelligent Data Processing Technology		√																	√													
Embedded Systems		√															√															

Programme Specification Publication Dates

Document publication date	December 2021