

Programme Specification

FdSc Computer Networks and Cybersecurity

Programme Specification

1	Awarding Institution	Warwickshire College
2	Teaching Institution	Warwickshire College Group
3	Final Award Title	FdSc Computer Networks and Cybersecurity
4	Interim Award Titles	CertHE Computer Networks and Cybersecurity
5	Modes of Attendance	Full-time Part-time Blended learning
6	Locations of Study	
7	UCAS Code	I902
8	QAA Benchmark Statements	Subject Benchmark Statement: Business & Management (2019) Subject Benchmark Statement: Computing (2009) Foundation Degree Characteristics Statement (2020)
9	Accreditations	None
10	Other External Factors	None
11	Date of Approval or Most Recent Review	June 2015
12	Date of Revision	June 2020
13	Date for Next Review	June 2024

14 Educational Aims of the Programme

This FdSc Computer Networks and Cybersecurity aims to:

- A. provide appropriate knowledge, understanding and skills required for a career in computing networks and cybersecurity;
- B. develop students' subject specific skill sets in computer networks and cybersecurity to enhance employability within an entry level position;
- C. develop students as T-Shaped Learners in order to prepare them for personal, social and economic success;
- D. develop students' self-awareness and personal and professional reflection;
- E. develop students' ability to apply the principles of evidence-based practice;

- F. provide work-based and placement learning within the programme, enabling students to study full-time whilst integrating their studies with employment practise;
- G. equip students for progression to honours degree study and to develop a positive attitude towards lifelong learning.
- H. In line with Foundation degree characteristics, this programme will provide the opportunities to develop and reflect on work-based learning skills and competencies

15 Intended Learning Outcomes of the Programme

The intended learning outcomes for the FdSc Computer Networks and Cybersecurity are shown in sections 15.1 to 15.4 below, grouped under the following headings

- Knowledge and understanding of the subject
- Cognitive skills
- Practical and/or professional subject skills
- T-shaped learner skills (platinum level)

Warwickshire College Group believes that students should be equipped with an entrepreneurial mindset – to be confident, innovative, resilient, enterprise-aware and willing to ‘have a go’ – in order to prepare them for personal, social and economic success.

The college uses a T-Shaped Learning model which allies this breadth of capabilities and qualities with depth of technical competence through developing four core entrepreneurial behaviours: self-efficacy, social skills, technical competence and enterprise. The core enterprise behaviours include personal qualities for success in the workplace of the future; capacities to find, make and manage networks and collaborations; knowledge and skills in vocational and academic areas and aptitude for driving successful enterprises.

The T-Shaped Learner skills are as follows (see the platinum level of the T-Shaped Learner framework, available in your Course Handbook, for more information):

Personal Effectiveness	Enterprise:	Social Skills:
Resilience	Business Awareness	Teamwork
Focus and Drive	Creativity	Leadership
Reliability	Initiative	Networking
Reflectiveness	Problem Solving	Empathy
Adaptability	Risk Taking	Communication

15.1	Knowledge and Understanding of the Subject
On successful completion of the programme a student should be able to demonstrate knowledge and understanding of:	
KU1	delivering excellent customer service to a range of various user groups;
KU2	the role of internet protocols in supporting communications in networks;
KU3	providing appropriate routing and switching options for scalable networks;
KU4	the construction, operation and monitoring of networks;
KU5	risks and security implications for running a network.

15.2	Cognitive Skills
On successful completion of the programme a student should be able to:	
CS1	solve complex problems in a range of familiar and unfamiliar situations and, through reflection, improve problem solving ability;
CS2	develop own intellectual powers, understanding and judgment and ability to see relationships within what they have learnt and to examine the field of study in a broader perspective;
CS3	interpret complex projects requiring time management, use of appropriate resources to achieve business objectives of the project;
CS4	collect and interpret statistical data to achieve to refine projects to meet business objectives;
CS5	critically evaluate created solutions against appropriate theory and for suitability of users for current and future use.

15.3	Practical and/or Professional Subject Skills
On successful completion of the programme a student should be able to:	
PS1	reflect on own reliability in a range of situations and contexts and evaluate how own reliability affects others;
PS2	create an extensive list of valuable and realistic networking opportunities in own industry sector and evaluate own behaviours in developing an effective professional network;
PS3	design, plan, implement a complex network;
PS4	troubleshoot network issues;

PS5	make appropriate judgements in formulating and creating solutions to solve complex problems.
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15.4 T-Shaped Learner Skills (Platinum Level)

On successful completion of the programme a student should be able to:

TS1	communicate effectively to a range of audiences using the appropriate format and, following evaluation, identify methods for improvement;
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TS2	evaluate and, through reflection, improve own confidence to take initiative;
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TS3	evaluate own ability to reflect meaningfully and honestly on personal performance and review strategies for using feedback from self and others to improve;
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TS4	evaluate own resilience in response to a range of challenges and set-backs;
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TS5	use customer service related principles to develop solutions to client projects.
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16 Relationship with External Reference Points

The aims and outcomes of this award are clearly in alignment with the Frameworks for Higher Education Qualifications of Degree-Awarding Bodies in England, Wales and Northern Ireland (October 2014) at level 5, as referenced in the QAA UK Quality Code for Higher Education (2018).

This programme is designed for the provision of key understanding, knowledge and skills as identified in the QAA Subject Benchmark Statements for Business and Management (2019) and Computing (2019). The relevant understanding, knowledge and skills from the Benchmark Statement have been mapped to the modules at the end of this document. The programme is also mapped to the defining characteristics of Foundation degrees identified in the QAA Foundation Degree Characteristics Statement (2020).

17 Course Credit and Outcome Requirements

Warwickshire College Group higher education programmes are based on a credit-accumulation system where 1 credit represents 10 hours of student study time. Modules are normally 20 credits or multiples thereof. Modules are also at different levels (4, 5 and 6) according to the intellectual challenge. Courses leading to specific awards include core modules. To achieve a named award students must pass all core modules.

FdSc Computer Networks and Cybersecurity (Foundation degree)

To be awarded with a foundation degree, students must successfully achieve a total of 240 credits of which a minimum of 100 credits must be at level 4 and a minimum of 120 credits must be at level 5.

Students who exit the programme before achieving the full award may be eligible for an interim award as follows.

CertHE Computer Networks and Cybersecurity (Certificate of higher education)

Students will have obtained a minimum of 120 credits, of which 100 must be at level 4.

17.1 Course Work-Based and Placement Learning (WBPL) Requirements

Work-Based and Placement Learning is a fundamental and mandatory aspect of all foundation degrees.

Work Based and Placement Learning requirements for students not employed in an appropriate organisation:

- Students will normally complete 200 hours of WBPL at level 4 with a minimum of 150 hours. All students must complete 400 hours of WBPL across the duration of the course.
- The placement time is normally divided across both years equally, and each year's placement will involve a different set of responsibilities within the business.
- The WBPL is embedded in modules as follows:
 - 401CIT User Experience: 80 hours
 - 415CIT Computing and Emerging Technology: 60 hours
 - 410CIT Systems Analysis and Database Design: 60 hours
 - 585BMT Work-Based Project: 200 hours
- The key functional aspect of the work placement is for the student to experience engagement within a working environment of a line managed project.

Part-time and blended learning students may complete all aspects of the WBPL via their employed status unless an additional placement (s) is required to meet specific learning outcomes.

17. 2 Course Structure and Distinctive Features

The course structure provides for the student to develop employability skills within a computing environment.

- Common skills development and business knowledge modules are taught across a range of courses. The students will engage actively during learning with a variety of students from different programmes.
- Further common modules represent fundamental computing aspects that develop skills and knowledge to operate in a large range of organisations.
- Finally, subject-specific modules ensure that the course is appropriately focused. In the case of FdSc Computer Networks and Cybersecurity these modules focus on the operation and management of IT Networks in Business Operations.
- To support the learning process, the course offers tutorial support: academic tutorial workshops in each of the department's five key subject areas (financial management, leadership and study skills, computing infrastructure, marketing and sales, and global business); course tutor support (at the qualification level); and personal and professional tutor support (for personal issues and professional development and placement issues).
- Modules 421, 422 and 521 help to prepare students with the knowledge to undertake the Cisco CCNA qualification. These need to be taken at an external test centre. You do not need to pass the external tests in order to achieve the Foundation Degree.

All modules are mandatory (M). This course map at 17.3, below, gives basic details for all modules relating to the award including module codes for any pre-requisite or co-requisite modules.

17.3 Course Map – Course Map – Full-Time Study and Part-Time Study

Full-time and part-time students both study the programme over two years. The different nature of work-based learning for part-time students, all of whom must be employed in an appropriate role, enables an intensive engagement with the materials such that class contact time can be reduced.

Level 4

Module Code	Module Title	Credit Value	Pre-req Co-req	Delivery	Module Status
400WCG	ASSET	20	None	Year 1	M
401CIT	User Experience	20	None	Year 1	M
410CIT	Systems Analysis And Database Design	20	None	Year 1	M
415CIT	Computing and Emerging Technology	20	None	Year 1	M
421CIT	Introduction to Networks	20	None	Year 1	M
422CIT	Switching, Routing and Wireless Essentials	20	None	Year 1	M

WBPL Requirements at Level 4

Students will normally complete 200 hours of WBPL at level 4 with a minimum of 150 hours.

Level 5

Module Code	Module Title	Credit Value	Pre-req Co-req	Delivery	Module Status
585BMT	Work-Based Project	40	None	Year 2	M
520CIT	Object-Oriented Programming	20	None	Year 2	M
521CIT	Enterprise Networks and Automation	40	None	Year 2	M
522CIT	Network Security	20	None	Year 2	M

WBPL Requirements at Level 5

All students must complete 400 hours of WBPL across the duration of the course.

18 Learning & Teaching Methods

The key aspect of this course is a progressive development of knowledge and relevant skill sets to maximise employability within the specific field. The student develops the ability to use evidence based research to construct well-reasoned discussions and plans that are smart in their formulation. To achieve this, extensive use will be made of formative assessment. The assignments are designed to be approached via a progressive building of knowledge and skills, for which the various formative assessments form stepping stones to the summative assessment. The assignments are therefore mile-markers in the students' learning of new skills and knowledge.

Scheduled learning and teaching activities are structured into approximately a third of the time on content delivery (including sign posting for guided learning by the use of reading lists), a third of the time on active learning engagement (either individually or in groups using compare & contrast and visualisation to interpret understanding of the content) and a third of the time is used for seminar discussion work, usually led by the students with direction from the lecturer with academic material.

Work-based and placement learning is highly integrated, specifically for the core subject modules. With many modules focusing on case-study evaluation, work based experiences will be encouraged to form a compare and contrast evaluation across the course.

19 Assessment

The summative assessment for each module will be scheduled to follow at least one aspect of formative assessment per assignment. Formative assessment will be encouraged to be used from a variety of sources with peer review featuring significantly. Self-reflection to formatively assess a student's own progress will also be used.

Seminar discussion groups are used to assimilate published research and discuss findings or develop abstracts of published work. Students will also undertake peer review activities, individual and group presentations in lecture and board room environments.

The table below shows the weighting of different assessment activities used across the programme(s). Please see section 28 for a more detailed map of assessments across modules.

19.1 Weighting of Assessment Activities		
Level 4	Coursework	100%
	Written Examination	0%
	Practical Examination	0%
Level 5	Coursework	100%
	Written Examination	0%
	Practical Examination	0%
Whole Course	Coursework	100%
	Written Examination	0%
	Practical Examination	0%

20 Regulation of Assessment
<p>Your course uses the Warwickshire College Group higher education (HE) academic regulations for foundation degrees awarded by Warwickshire College. The full Warwickshire College Group HE academic regulations can be found in the HE area of the Warwickshire College Group intranet.</p> <p>Marks are provided along with coursework feedback within four term-time weeks of submission or before the next assessment in the same subject is due, whichever is the sooner. All marks remain provisional until they have been ratified by the Subject Assessment Board. The overall grade for a whole module will be determined by the Subject Assessment Board which will consider the overall grade profile of all assessments for that module.</p> <p>If an overall module grade does not meet the minimum pass grade then the relevant Assessment Board will make a decision relating to the student's eligibility to reassess or restudy the module in line with the academic regulations. Individual assessments cannot be resubmitted to improve individual grades. A Course Assessment Board will make decisions about whether students have satisfied all of the requirements for progression or final award grades.</p> <p>Should a student fail a module then the Course Assessment Board will notify the student of their entitlement to be reassessed or to restudy the module in the following year. Students will be advised of the reassessment procedures which normally require students to carry out and resubmit work at the end of the summer. Students should ensure that they are available to carry out reassessments at this time should the need arise.</p>

21 Entrance Requirements

The programme is designed chiefly for students progressing from studies at level three but applications are welcomed from individuals with employment experience and non-standard qualifications. Accreditation of prior (experiential) learning will be considered.

Applicants with formal qualifications will normally be expected to have a minimum of 80-UCAS tariff points. This may comprise any combination of:

- BTEC National Certificate/Diploma/Extended Diploma in a relevant subject; or
- one A Level in a relevant subject; or
- Kitemarked Access to HE; or
- NVQ Level 3 Computing

Applicants with international qualifications will be considered on the merits and equivalence of their offered qualifications supported by evidence of competency in written and spoken English (e.g. IELTS score 6.0 or equivalent).

22 Support for Students and their Learning

Equal Opportunities

Student support is consistent with the Warwickshire College Group policy on Equality and Diversity which can be found on the Warwickshire College Group intranet.

Learning Resources

Warwickshire College Group library service provides a full range of texts, journals, e-books and other online resources. The College virtual learning environment known as the can be accessed via the Internet and holds a wide range of course materials and assessment information.

Induction

All students will be given a full induction to their course which will include meeting academic staff and non-academic support staff, plus a tour of relevant facilities.

Tutorials

Students will be allocated an academic tutor who will offer support throughout their studies. Students are entitled to a minimum of three tutorials per year on an individual basis with their academic tutor. In addition, students will have a pastoral tutor to support them through their studies and provide a sign-posting service to the other support available in the College.

Study Skills

During their course all students should develop and exercise a range of academic competencies as described in the programme aims and intended learning outcomes, including through the module Academic Study Skills, Employability and T-Shaped, known as ASSET.

Study Skills Advice has been developed in order to help students to plan and carry out their coursework and assessments, making the most of the time available and helping them to achieve their potential.

T-Shaped

WCG is committed to developing enterprise, entrepreneurship and employability skills alongside the main qualifications studied by our students. Our T-Shaped Framework provides a structure and context for staff and students as it combines technical knowledge and skills with professional skills, personal behaviours and qualities. Curriculum teams embed the T-Shaped transferable skills into their teaching schedules and assessment programmes. The T-Shaped framework creates a purposeful atmosphere where all students can think and create, it provides an ambition to stretch the capabilities of all and understands how deep learning happens. It supports a curriculum that is based on delivering technical knowledge and skills alongside the development of transferable skills that will help each student to become more employable and therefore progress to a positive destination after leaving College.

Student Services

The college's Student Services department provides a range of support and guidance services for students as described in the Course Handbook and Warwickshire College Group intranet.

Careers Advice

Students will meet for careers talks and common topic discussions allowing for closer support and exploration of your job opportunities. The Career Launchpad online employability portal offers the opportunity for students prepare for job interviews, and give tips for CV writing in addition to keeping students up to date with current affairs and updates from their chosen profession or sector.

Work-Based and Placement Learning (WBPL)

All HE WBPL is undertaken in line with the approved Warwickshire College Group WBPL documentation and procedures which are held on the HE area of the Warwickshire College Group intranet.

23 Evaluating and Enhancing the Quality and Standards of Teaching & Learning

Quality and standards at Warwickshire College Group are monitored and maintained through a wide range of processes, including those relying upon contributions from the student body.

The Course Manager completes an Annual Course Report (ACR) at the end of each academic year. This report enables the evaluation of many aspects of the course management including the quality of assessment and employer engagement. The ACR is circulated to key managers within Warwickshire College Group so that the quality of the course can be widely assessed.

One key piece of information that feeds into the Annual Course Report is the External Examiner (EE) Report. The EE looks at the quality of assessment on the course and sits on the Assessment Board that confirms grades and progression.

The annual programme of lesson observations undertaken within Warwickshire College Group assesses the standard of teaching in the classroom.

Student-focused quality mechanisms and student engagement mechanisms are as follows:

- The Students' Union has a series of approaches to Student Voice with details on the Warwickshire College Group intranet.

- A range of surveys allow students to comment formally on their programmes including the nationally-administered National Student Survey (NSS), the HE Course Survey and HE Module Surveys.
- Course Consultative Committees are held three times a year to ensure that student representatives have an input to course management issues including reviewing ACRs, EE reports and HE Course Survey results.
- Students are represented on a number of Warwickshire College Group meetings including the Higher Education Quality and Academic Standards Committee (HEQAS) which oversees a range of quality issues and student-focused topics in HE, including ACRs, EE reports and HE Course Survey & NSS results.

24 Indicators of Quality and Standards

WCG (the trading name of Warwickshire College) is a large mixed economy further education (FE) College. We offer a range of provision with courses spanning 13 of the 19 principal subject areas prescribed for Higher Education delivery.

In response to planned growth, development of specialist provision and to meet the needs of local and regional students, WCG has grown to become a family of seven colleges, each with its own community identity. Notwithstanding the seven college brands, WCG is a single institution with one management team and one governing body. Policies and procedures are cross-college and operate across all college sites.

- Work closely with employers to ensure vocational curricula is relevant and current;
- Provide a range of appropriate qualifications to provide choice for students and employers;
- Provide every HE student with access to appropriate tutorials;
- Maintain fair entry requirements;
- Provide access to HE students with special educational needs and disabilities;
- Support under-represented groups in Higher Education through strategic access and participation planning;
- Timetable courses to facilitate participation by parents, employees and carers;
- Limit group sizes to maintain high level of student support and personalised learning;
- Develop the curriculum in response to local and regional economic needs;
- Work towards continuous quality improvement;
- Support high quality teaching and scholarship through training and staff development;
- Encourage student participation in HE decision making;
- Provide prospective and current HE students with appropriate Information, Advice and Guidance (IAG);
- Work in partnership with HEIs to enable delivery of validated provision; and
- Work with colleges and College HE groups, notably the Association of Colleges and Mixed Economy Group, to share good practice and influence national strategy.

The College has a well-established HE committee structure that maintains oversight of the HE provision. HE Academic Board (HEAB) has strategic oversight of HE within the College. Reporting to HEAB is HE Quality and Academic Standards Committee (HEQAS) and HE Student Experience Committee (HESEC). HEAB, HEQAS and HESEC each have terms of reference that are adhered to and regularly reviewed. HEQAS and HESEC report termly to HEAB, and ASQA (the Board of Governors' Academic Standards and Quality Assurance Committee) receives regular reports from HEAB.

Detailed scrutiny by QAA relating to the College's application for Foundation degree awarding powers (FDAP) resulted in Her Majesty's Most Honourable Privy Council granting FDAP to Warwickshire College on 1st September 2014. Following this achievement, in 2015 WCG underwent a light touch of the QAA's HE Review process and was judged to have Met Expectations. The results from each review were very positive and significant areas of good practice were recognised across a wide range of activities.

In September 2018, Warwickshire College was registered by the higher education regulator, Office for Students as a provider of higher education.

25 Progression

Students who successfully achieve the FdSc Computer Networks and Cybersecurity are eligible to apply for entry to the BSc (Hons) Computing Strategy and Management level six programme at Warwickshire College Group (validated by the University of Gloucestershire).

The FdSc Computer Networks and Cybersecurity will also provide opportunities for students who wish to progress to a computing-related honours degree at other institutions. Warwickshire College Group will support students in making applications to a range of programmes at local universities.

The FdSc Computer Networks and Cybersecurity has been specifically developed to facilitate students to maximise employability with some basic industry specific experience, possibly via the work placement. Alternatively the student successfully completing the course may wish to focus on a specialism within the computing area.

26 Further Information

This programme 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 by taking full advantage of the learning opportunities provided.

More detailed information relating to this programme can be found in the Course Handbook and Module Handbooks.

The language of study is English.

27 Curriculum Map

The curriculum map, over the page, identifies where the intended learning outcomes of the programme are covered within the modules. A box is ticked where an outcome is demonstrated to a significant extent in a given module. The coded columns relate to the intended learning outcomes within the four categories described in sections 15.1 to 15.4:

- KU Knowledge and understanding of the subject
- CS Cognitive skills
- PS Practical and/or professional subject skills
- TS T-shaped learner skills

Level 4

Module Codes	Module Titles	K	K	K	K	K	C	C	C	C	C	P	P	P	P	P	T	T	T	T	T
		U	U	U	U	U	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
400WCG	ASSET	✓					✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	
401CIT	User Experience	✓					✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓
410CIT	Systems Analysis and Database Design						✓		✓	✓	✓	✓				✓		✓	✓	✓	✓
415CIT	Computing and Emerging Technology						✓	✓	✓		✓	✓	✓			✓	✓	✓	✓	✓	
421CIT	Introduction to Networks		✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
422CIT	Switching Routing and Wireless Essentials		✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

Level 5

Module Codes	Module Titles	K	K	K	K	K	C	C	C	C	C	P	P	P	P	P	T	T	T	T	T
		U	U	U	U	U	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
585BMT	Work-Based Project	✓					✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
520CIT	Object-Oriented Programming						✓		✓		✓	✓				✓		✓	✓	✓	✓
522CIT	Network Security	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
521CIT	Enterprise Networks and Automation		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

28 Assessment Grid

The assessment grid shows the range of assessment methods used throughout the programme such that students are provided with variety in assessment and are given opportunities to use a range of academic and practical skills across the scope of their module diet.

Module Codes	Module Titles	Presentation	Report	Timed tests	Other
400WCG	ASSET	Group, with discussion 30%	Summary 40%		Data assessment 30%
401CIT	User Experience				Blog 50% / Report, prototype, demonstration 50%
410CIT	Systems Analysis and Database Design		30%		Relational Database, Documentation and Demonstration 70%
415CIT	Computing and Emerging Technology				Reflection 30% Discussion Seminar 70%
421CIT	Introduction to Networks		30%	Theory – 35% Practical – 35%	
422CIT	Switching Routing and Wireless Essentials		30%	Theory – 35% Practical – 35%	

Module Codes	Module Titles	Presentation	Report	Timed tests	Other
585BMT	Work-Based Project	Proposal 15%			Work Based Project 85%
520CIT	Object-Oriented Programming		30%		Individual Presentation / Product and Demonstration with Documentation 70%
522CIT	Network Security		30%	Theory – 35% Practical – 35%	
521CIT	Enterprise Networks And Automation		20%	Theory – 30% Practical – 35% Phase Tests – 15%	