

## Course Specification

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<b>Status:</b>	Validated

## Core Information

<b>Awarding Body / Institution:</b>	University of Wolverhampton		
<b>School / Institute:</b>	School of Mathematics and Computer Science		
<b>Course Code(s):</b>	CS030P01UV	Full-time	18 Months
<b>Course Title:</b>	MSc Cyber Security with Professional Practice		
<b>Hierarchy of Awards:</b>	Master of Science Cyber Security with Professional Practice Postgraduate Diploma Cyber Security Postgraduate Certificate Cyber Security University Statement of Credit University Statement of Credit		
<b>Language of Study:</b>	English		
<b>Date of DAG approval:</b>	20/Feb/2019		
<b>Last Review:</b>	2018/9		
<b>Course Specification valid from:</b>	2018/9		
<b>Course Specification valid to:</b>	2024/5		

## Academic Staff

<b>Course Leader:</b>	MD ARAFATUR RAHMAN
<b>Head of Department:</b>	

# Course Information

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Location of Delivery:	University of Wolverhampton
Category of Partnership:	Not delivered in partnership
Teaching Institution:	University of Wolverhampton
Open / Closed Course:	This course is open to all suitably qualified candidates.

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## Entry Requirements:

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Entry requirements are subject to regular review. The entry requirements applicable to a particular academic year will be published on the University website (and externally as appropriate e.g. UCAS)

A lower second Honours Degree in Computer Science or equivalent.

A Postgraduate Certificate in Computer Science or a related subject with a minimum of grade 50% in all modules.

Alternatively:

Evidence of industrial certifications in Information security such as CISSP, CEH, BCS will also be considered for suitable candidates with a minimum of 3 years working experience in related industries. An interview process will also be utilised to verify suitability for the course for candidates with non-standard academic backgrounds but with demonstrable industry experience in the field.

## International Applicants

Your qualifications need to be deemed equivalent to the above entry requirements.

- English Language requirements are normally IELTS 6.0 with a minimum of 5.5 in each area (unless otherwise stated) or equivalent accepted qualification <https://www.wlv.ac.uk/international/international-academy/english-at-the-international-academy/language-entry-requirements/>
- Please use the following link <https://www.wlv.ac.uk/international/international-academy/> to see the range of English Language Pre-Sessional courses and related Pre-Masters courses offered by the University of Wolverhampton International Academy.

For further information relating to overseas qualification please use the following link <https://www.wlv.ac.uk/international/our-locations/your-country/>

## Distinctive Features of the Course:

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The MSc Cyber Security with Professional Practice aims to develop the next generation of industry leaders and address the shortage of cyber security professionals globally.

For the Professional practice students will be provided with an opportunity to secure a summer work placement, giving students an experience of the workplace environment to put their learning into practice. Students' will be required to complete an additional Module: 7CS025 – Professional Work Experience and Development and produce a reflective learning portfolio to demonstrate tasks undertaken and experience gained during the placement.

NOTE: Placements are offered on a competitive basis, as determined by the employers, but are not guaranteed. Placements may be paid or unpaid and enhances the students' employability.

The exponential increase in mobile devices, converged applications and Cloud technologies, initiatives such as Bring your Own device (BYOD) / Choose Your Own Device (CYOD) and the advent of digital information technologies, has increased the proliferation of threats in our vibrant and active cyber-physical-natural environment diluting further its perimeter. Our cyberspace is constantly increasing its size almost linearly to its value recognising cyber security as a global response to the challenges posed by constantly evolving

systems which are harder to secure. The MSc Cyber Security with Professional Practice seeks to address the increasing demand in Cyber Security related domains in both academic vocational qualifications and projection for an increased shortage of Cyber Security professionals in the industry. The course has been designed by a team of leading experts, researchers and trainers in the field and gives the opportunity to the students to be exposed to cutting edge technologies, tools and techniques in cyber exploitation and defence.

### Educational Aims of the Course:

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The educational aims of this course are:

- To enhance critical understanding and synthesis skills with regards to security processes, techniques and methodologies around cyber security in a blended learning environment with strong hands-on explication using cutting edge software and hardware. The course will cover cyber defence elements and state-of-the-art in exploitation techniques, threats and security risks in both targeted and multi-stage cyber-attacks in the cyberspace.
- To identify and mitigate security violations across the cyberspace with strong emphasis on Governance, Risk and Compliance (GRC) frameworks and standards; and the importance of automation and orchestration of security operations in highly volatile and sensitive environments in order to develop better and more efficient security controls.
- Be exposed to formalised network security principles and protocols' design and further expand your ability and capabilities in strong system administration and modelling of the threat landscape underpinned by research informed delivery throughout the programme.
- Be exposed to a wide range of pedagogical approaches in network defence with the ability to design, develop and test innovative solutions to real-life issues governing the security status of systems, people and infrastructures in our modern cyberspace. This will allow students to gain a holistic education that balances technical, management and research skills to perfectly match the profile of Information security professionals.
- The course has been developed with reference to the requirements of cyber security professional bodies. It aims to produce post graduates with subject-specific and transferable knowledge and skills suited to a career in the cyber security industry or other related IT disciplines.

### Intakes:

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September  
January  
May

### Major Source of Funding:

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Office for Students (OFS)

### Tuition Fees:

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Tuition fees are reviewed on an annual basis. The fees applicable to a particular academic year will be published on the University website.

Year	Status	Mode	Amount
2021/2	H	Full Time	£7278.00
2021/2	Overseas	Full Time	£14950.00
2022/3	H	Full Time	£8883.00
2022/3	Overseas	Full Time	£15450.00
2023/4	H	Full Time	£9328.00
2023/4	Overseas	Full Time	£16450.00

PSRB:

None

Course Structure:

## January (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
7CS019	Research Methodologies and Project Management	20	SEM2	Core
7CS023	Ethical Hacking	20	SEM2	Core
7CS024	Internet of Things Security	20	SEM2	Core

## January (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
7CS017	Proactive Network Defence	20	SEM1	Core
7CS018	Information Assurance	20	SEM1	Core
7CS022	Incident Management and Response	20	SEM1	Core

## January (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
7CS020	MSc Project Cyber Security	60	SEM2	Core
7CS025	Professional work experience and development	20	CRYRA	Core

## May (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
7CS019	Research Methodologies and Project Management	20	SEM3	Core
7CS023	Ethical Hacking	20	SEM3	Core
7CS024	Internet of Things Security	20	SEM3	Core

## May (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
7CS017	Proactive Network Defence	20	SEM1	Core
7CS018	Information Assurance	20	SEM1	Core
7CS022	Incident Management and Response	20	SEM1	Core
7CS020	MSc Project Cyber Security	60	SEM2	Core

## May (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
7CS025	Professional work experience and development	20	CRYRA	Core

## September (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
7CS017	Proactive Network Defence	20	SEM1	Core
7CS018	Information Assurance	20	SEM1	Core
7CS022	Incident Management and Response	20	SEM1	Core
7CS019	Research Methodologies and Project Management	20	SEM2	Core
7CS023	Ethical Hacking	20	SEM2	Core
7CS024	Internet of Things Security	20	SEM2	Core
7CS025	Professional work experience and development	20	CRYRA	Core



**Learning Outcomes****Modules**

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**PGCert Course Learning Outcome 1 (PGCCL01) CS030P-MA-PGCCL01**

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**PGCert Course Learning Outcome 2 (PGCCL02) CS030P-MA-PGCCL02**

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**PGCert Course Learning Outcome 3 (PGCCL03) CS030P-MA-PGCCL03**

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**PGCert Course Learning Outcome 4 (PGCCL04) CS030P-MA-PGCCL04**

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**PGCert Course Learning Outcome 5 (PGCCL05) CS030P-MA-PGCCL05**

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**PGCert Course Learning Outcome 6 (PGCCL06) CS030P-MA-PGCCL06**

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**PGDip Course Learning Outcome 1 (PGDCL01) CS030P-MA-PGDCL01**

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**PGDip Course Learning Outcome 2 (PGDCL02) CS030P-MA-PGDCL02**

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**PGDip Course Learning Outcome 3 (PGDCL03) CS030P-MA-PGDCL03**

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**PGDip Course Learning Outcome 4 (PGDCL04) CS030P-MA-PGDCL04**

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**PGDip Course Learning Outcome 5 (PGDCL05) CS030P-MA-PGDCL05**

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**PGDip Course Learning Outcome 6 (PGDCL06) CS030P-MA-PGDCL06**

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**Masters Course Learning Outcome 1 (MACLO1) CS030P-MA-MACLO1**

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**Masters Course Learning Outcome 2 (MACLO2) CS030P-MA-MACLO2**

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**Masters Course Learning Outcome 3 (MACLO3) CS030P-MA-MACLO3**

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**Masters Course Learning Outcome 4 (MACLO4) CS030P-MA-MACLO4**

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**Masters Course Learning Outcome 5 (MACLO5) CS030P-MA-MACLO5**

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**Masters Course Learning Outcome 6 (MACLO6) CS030P-MA-MACLO6**

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**Masters Course Learning Outcome 7 (MACLO7) CS030P-MA-MACLO7**

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**Teaching, Learning and Assessment:**

You will undertake a wide range of learning activities that may include:

- Computer based learning
- Supported learning using the University VLE (CANVAS) as a learning tool, for information and interactive communications
- Lectures
- Tutorials (smaller group / one-to-one)

- Workshops
- Case studies
- Structured laboratory exercises
- Individual structured assignment-based learning
- Directed study
- Individual or group exercises
- Research project investigations

Assessment methods may include:

- Written reports
- Essays
- Literature reviews
- Exams
- Presentations

Students will also have the opportunity to engage into formative assessment throughout the course, especially during exercises in the practical sessions where feedback on progress and performance will be given by their tutors for each of the tasks allocated. The assessment strategy for this course is designed around a holistic evaluation on knowledge and skills acquired with strong emphasis on the requirements for this mode of delivery and diverse skills, background and expectations of the target audience. All assessments used in the course are in perfect alignment with University requirements, regulations and policies. Coursework assignments typically incorporate formative feedback so that students can gain an insight into whether their work is meeting the necessary thresholds and focus on meaningful remarks to improve both their performance and understanding in the subject matter.

### Assessment Methods:

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At the University of Wolverhampton, a variety of modes of assessment will be used to support and test your learning and progress and to help you develop capabilities that are valued beyond your University studies and into your working life. Your course may include a variety of assessment activities:

Written examinations (including online examinations, open and closed book examinations and quizzes)  
 Coursework (for example, essays, reports, portfolios, project proposals and briefs, CVs, poster presentation)  
 Practical (for example, oral and video presentations, laboratory work, performances, practical skills assessment)

In the final year of your undergraduate degree, and at the end of your postgraduate degree, you are likely to be expected to write an extended piece of work or research, such as a dissertation or a practice-based piece of research.

### Student Support:

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General University support:

[University Learning Centres](#) are the key source of academic information for students. Learning Centres provide physical library resources (books, journal, DVDs etc.) and offer a range of study areas to allow students to study in the environment that suit them best: Social areas, quiet and silent areas. Learning Centres also provide access to wide range of online information sources, including eBooks, e-Journals and subject databases.

Learning Centres also provide students with academic skills support via the [Skills for Learning programme](#). Students on campus can attend workshops or ask for one-to-one help on a range of skills such as academic writing and referencing. Students can access a range of online skills material at: [www.wlv.ac.uk/lib/skills](http://www.wlv.ac.uk/lib/skills)

The [University Student Support website](#) offers advice on a variety of matters (careers, counselling, student union advice, etc.) Students can also access these services by booking appointment with the SU, careers, counselling services, etc.



## Course Specific Support

Students will have access to both departmental and university-wide support during their studies. Students will have access to a personal tutor and may book appointments at any point during the academic year. Newly enrolled students on the course will receive a comprehensive induction in the week prior to the commencement of the academic year. In addition to this, the course co-ordinator or his/her representative will meet you to explain the course structure and other issues relating to your experience at the university. These introductions will give you outlines of your course and units, a description of the ways you will be encouraged to develop your knowledge and skills, and signpost resources and materials to assist the process of your learning and success. You will be allocated a personal tutor when you join the course. This academic will be responsible of monitoring your academic progress throughout the course and will help you with any academic or personal issues that might come up. The personal tutor is your consistent point of contact for support and guidance but will on occasion refer you to other university staff for specific issues.

## Employability in the Curriculum:

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The course modules have been designed with reference to industry accreditation requirements and will be periodically evaluated against these.

The addition of 7CS025 – Professional work experience and development module will embed employability in this course by allowing students to undertake a summer placement with an employer, University of Wolverhampton IT services or The Wolverhampton Cyber Research Institute (WCRI).

As a student in this course, you will have a learning journey underpinned by our innovative research projects and strong links with the government and industry. You will have access to our team at the Wolverhampton Cyber Research Institute (WCRI) to learn with a first-hand experience how we address the unique complexity and challenges associated with cybersecurity in a constantly evolving threat landscape.

The diverse skillset around management of security as delivered in the course will equip you with a meaningful GRC knowledge and relevant experience to excel your career prospects. This is quite prominent due to the problem recruiters have to get hold of security managers with these skills. Interactive sessions in the form of demos will also be delivered by the teaching staff and guest speakers to further leverage understanding and stimulate attention towards relevant and pragmatic issues in the area.

The unit 'Research Methodologies and Project Management' in particular requires you to work in a team so as to apply a current project management methodology that embraces all of these knowledge areas in an integrated way while going through the stages of planning, execution and project control; you will work as part of a team, take responsibility and make autonomous decisions that impact on the project team performance.

In addition, and somewhat complementary the final project fosters independent and autonomous study: typically derived from your own ideas, in collaboration with a dedicated member of the teaching staff as project supervisor. That gives the ability to initiate discussion and project ideas that enrich the academic context in your studies and provide the foundations for a solid, relevant and strong project delivered at the end of your course.

The course has been designed in close consultation with Information Security industry experts and utilises unique tools and platforms to deliver its core elements, skills and capabilities required in the field.

After the completion of this course graduates are more likely to progress in the following areas:

1. Information Security analysts
2. Penetration Testers
3. Information Systems managers
4. Security architects
5. Intrusion analysts

Lead security auditors



THE UNIVERSITY OF OPPORTUNITY