

Programme Specification

A Programme Specification provides a concise summary of the main features of a programme and its intended learning outcomes. It is intended to be used by prospective students, current students, academic staff and potential employers.

Programme Title:	
MSc Critical Infrastructure Security (PgCert; Pg Dip).	
Programme (AOS) Code(s):	MB1CIS9
UCAS Code:	n/a
Name of Final Award:	Master of Science, MSc
Level of Qualification:	Level 7
Regime of Delivery:	Flexible & Distributed Learning: Blended Learning
Mode(s) of Delivery:	Part Time
Typical Length of Study (Years):	2 Years
Professional Body Recognition / Accreditation (including specific requirements where applicable):	n/a

Brief Description of the Programme

Critical Infrastructure supports all societies, and encompasses the ‘facilities, systems, sites, information, people, networks and processes, necessary for a country to function and upon which daily life depends. It also includes some functions, sites and organisations which are not critical to the maintenance of essential services, but which need protection due to the potential danger to the public (civil nuclear and chemical sites for example).’(UK Centre for the Protection of National Infrastructure – CPNI). Whilst different countries may identify the infrastructure sectors in different ways, all of them will be deemed fundamental to maintenance of societal stability.

The UK government’s official definition of CNI is:

‘Those critical elements of national infrastructure (facilities, systems, sites, property, information, people, networks and processes), the loss or compromise of which would result in major detrimental impact on the availability, delivery or integrity of essential services, leading to severe economic or social consequences or to loss of life.’

As these elements are so important; it is equally important to ensure that they are protected from attack, disruption and damage. With the constant threat of terrorism; the growth of cyber-crime and the prevalence of activism; maintain that protection is challenging and requires those engaged in the analysis, planning and management of it to be highly capable and knowledgeable. This programme is designed to develop high level capability and knowledge in professionals responsible for CI protection.

Programme Aims

- 1 Prepare students for a senior leader career through the development of enhanced personal and interpersonal skills and, in particular, leadership capability and skills in CI sector security and resilience

2	Equip students with an advanced understanding of concepts and current issues in CI security
3	Enable students to anticipate and address risks that may adversely affect their organisation thereby helping to ensure future organisational resilience and sustainability.
4	Develop the reflective and critical thinking as well as analytical and research skills needed to make logical arguments and creative contributions to improve CI security and resilience management and leadership practice.
5	Develop in students a strategic, integrated and holistic perspective on CI security through a study of organisations, risks and mitigation at:

Programme Learning Outcomes

The Bucks Graduate Attributes focus on the development of innovative leaders in professional and creative capacities, who are equipped to operate in the 21st Century labour market and make a positive impact as global citizens. The attributes are developed through the programme.

ID	Learning Outcome
Graduate Attribute: Knowledge and its application (K)	
K1	Critically approach contextual problems of CI security for their own operational and strategic environment.
K2	Assess organisational change requirements due to the impact of external and internal factors and understand their implications
K3	Illustrate and explicate effective CI security planning and implementation requirements
K4	Evaluate and solve complex problems through reflection upon current issues and thinking and management techniques
K5	Choose appropriate and organisationally viable approaches to the development of interrelationships for effective long-term CI security
Graduate Attribute: Creativity (C)	
C1	Design and effectively implement organisational communication plans and processes to support effective CI security
C2	Initiate and create organisational management teams and processes to provide and develop CI security
C3	Devise and generate organisational change management processes, particularly in relation to continuity and crisis management requirements
C4	Produce, manage and implement integrated and effective security programmes which can be applied in a variety of organisational circumstances both internal and external
C5	Make effective strategic resilience management decisions which are inextricably linked to the organisational mission and objectives
Graduate Attribute: Social and ethical awareness and responsibility (S)	
S1	Reflect upon and recognise the value and disadvantages of experience and bias in security analysis
S2	Analyse, synthesise and solve complex business problems related to CI security requirements
S3	Recognise and address ethical and governance issues related to CI security decisions
S4	Differentiate between highly effective and less effective organisations in the context of CI security planning and implementation

S5	Evaluate the rigour and validity of published research in its application to effective CI security
Graduate Attribute: Leadership and self-development (L)	
L1	Develop and deliver both in personal and organisational contexts the processes and functions required for effective management implementation of initiatives
L2	Plan, design and prepare appropriate and adaptable personnel management systems for the implementation and long-term direction of resilience and wider management
L3	Evaluate and balance competing components of organisational activity to offer optimal opportunities for appropriate anticipation, response and recovery
L4	Formulate and develop original, insightful and effective problem-solving capabilities in order to ensure and support management processes and capabilities
L5	Develop the capability to work independently and in a self-directed fashion across a range of organisational resilience and general projects

Programme Structure

Programmes are structured in stages. The number of stages will vary depending on the mode (e.g. full-time, part-time), duration and location of study which will be detailed in the Programme Handbook.

Modules are set at a specific academic level and listed as either core (compulsory) or optional. The level indicates the relative academic difficulty which will increase through the programme. Passing modules will reward you with academic credit. The amount of credits will depend on the complexity of the module and the level of effort required, which is measured in 'notional learning hours'.

Our [Academic Advice webpages](#) provide more information on the structure of taught awards offered by the University.

Please note: Not all option modules will necessarily be offered in any one year. Other option modules may also be introduced at a later stage enabling the programme to respond to sector developments.

Level Seven

Code	Module Title	Credit	Core / Option	Compensable (Normally Yes)
SE701	Threat, Risk and Impact Perspectives	30	C	Yes
SE709	Areas of Critical Infrastructure	30	C	Yes
SE710	Critical Infrastructure Connectivity and Vulnerability	30	C	Yes
SE711	Critical Infrastructure Security Strategies	30	C	Yes
SE705	Research and Dissertation	60	C	No

Learning and Teaching Activities

Please see the [Academic Advice pages](#) for a description of learning and teaching activities that are recognised by the University. Detailed information on this specific programme is outlined below:

Modules are conducted over 15 weeks, except for SE705 Research and Dissertation and include an induction phase followed by blended distance and face to face learning. Throughout the Module, there will be emphasis on applying the various principles, theories and practices to the student's individual business, work role and employment requirements or aspirations. A 'pre-study' element is also added to the first module to orientate students towards the demands of academic study.

Students will be able to access support mechanisms and module tutors through email, telephone, Blackboard and face-to-face. There will be students who are unable to attend workshops; and in these cases the normal range of activities (such as tutor input, discussions, group work and tutorials) are provided and managed in the virtual learning environment supported by detailed tutor interaction with each student. This strategy allows a tutor-student relationship to be built and developed effectively. The range of online activities will relate to topics that are set in a scheme of work for the Module. Learning outcomes are applied to the content throughout the Module; and are a constant and underpinning element of all activity. A consistent approach in this is the relationship of theory to practice. Students are introduced to theories and content; discussion applies this to their experiences and workplace. Core texts are recommended and students are assisted to further reading by the use of Blackboard and Library databases; the Key Texts will be provided within the University Library provision of e-books.

Understanding of concepts will be developed through directed reading, and by exercises developed in 'Blackboard', with suggested answers. Supplementary material will be available to help students use appropriate research methodologies and to direct them towards wider and current industry and sector research materials and sources. The use of email and discussion facilities in 'Blackboard' will be encouraged as an important contributor to the exchange of ideas and theories; this is especially important when considering the range of student backgrounds and experience levels, all of which enables individuals and groups to draw upon broader knowledge.

Each Module has 2 x 2-day workshops* (all of which are audio and video recorded) which are designed to allow students to benefit from face to face and developed discussion and development of ideas in a group setting (*subject to minimum attendance).

Students will be expected to undertake independent study to develop their topic knowledge and evaluation skills to appropriate levels. In this Module, students will be guided towards techniques and resources to support their activity and to begin to develop postgraduate level capabilities as early as possible within the programme. Therefore, there will also be activity between tutors and students in the effective development of research methods and capability and their application.

Additional Course Costs

There are costs associated with all studies, additional to the tuition fee, which require consideration, when planning and budgeting for expenditure. Costs are indicative and for the total length of the course shown unless otherwise stated and will increase with inflation; depending on the programme they may include equipment, printing, project materials, study trips, placement activities, DBS and/or other security checks.

None

Contact Hours

1 unit of credit is the equivalent of 10 notional learning hours. Full time undergraduate students study 120 credits (1200 hours) and full-time postgraduate students study 180 credits (1800 hours) per year or 'stage' of the course.

Course Stage	Scheduled Activities (Hours)	Guided Independent Study (Hours)	Placement / Study Abroad (Hours)
Year One	86	514	0
Year Two	162	1038	0

Assessment Methods

The [Assessment and Examination webpages](#) provide further information on how assignments are marked and moderated, including a description of assessment activities. These also include further information about how feedback on assessed work is provided to students, including our commitment to ensure this is provided to students within 15 working days (the 'three-week turnaround').

The assessment strategy is designed to give students the opportunity to focus on the demands of evaluating theories and their application by providing the opportunity to produce a written assignment (which also allows detailed assessment of academic writing capability). Thus, assessments contain both the results of self-directed study discursive elements to promote development of critical evaluation skills appropriate to master's level. The assessments will link the indicative content with the learning outcomes within the context of practical business situations.

All assessment is undertaken through application of the criteria and weightings outlined on the Module Descriptors. Module Assignment Briefs will be published on the University VLE prior to the commencement of the Module.

Formative assessment is given by VLE and workshop discussion. Short tasks that build understanding, knowledge and confidence will be based around case studies and video-based tasks. In addition, there will be a peer-review formative where students will be paired off to mark each other's work; this is a very effective method of building understanding of the requirements for analytical and evaluative work and the structuring of written assignments.

The Module assessments are designed to encourage a disciplined approach to programme deadlines and to ensure that students develop and demonstrate the capability to not only provide written work but to self-analyse, reflect and develop their own approaches and academic views. In the summative assessment and in marking, evidence will be sought to recognise that the learning outcomes of the assignment have been achieved at the appropriate level. Feedback will be provided against each of the assessment criteria so that the students can understand the associated links to the learning outcomes for the Module. Feedback is written and provided via Turnitin in accordance with University Regulations. Students are given an opportunity to reflect on feedback.

Self-assessment becomes an important part of the students' development during the course, and is implicit throughout the tutorial and critique system. The opportunity for disagreement and reasoned justification of student work is present throughout the assessment method to incorporate the lessons learned and theories/applications studied during the programme, but also to amend and update their original ideas based upon feedback, further tutor interaction and their own research and studies.

Classification

Calculation of final award:

The final award of MSc in Critical Infrastructure Security is based on the completion of 180 L7 credits, including SE705 Research and Dissertation Module.

For full details of assessment regulations for all taught programmes please refer to our [Results webpages](#). These include the criteria for degree classification.

Admissions Requirements

Please see the [Application webpages](#) for more information on how to apply, including a statement on how we support students from a variety of backgrounds. Please also see our [general entry requirements](#) for taught programmes. Applicants who do not meet our published entry requirements are encouraged to contact our admissions team for further advice and guidance.

Typical applicant profile and any programme-specific entry requirements

Applicants who are in employment may qualify for entry without holding a first degree. The University welcomes applicants with non-standard or no formal qualifications and applicants will be assessed through a recruitment process based on interview, portfolio, employment history or other evidence of achievement and ability to benefit from the course.

- Employees who are currently working in, or have the potential to work in a key role where they have responsibilities for ensuring that security protection is incorporated into CI operations, and who may wish to gain a high level academic award in this important and emerging area.
- Individuals who have experience and skills in security management as generalists or CI specialists.
- Mature applicants who have been out of the education system for some time and who wish to focus on developing a career in this subject.
- Graduates from other relevant HE programmes offered by the University (and others) who wish to continue their professional and academic development. (Security, Risk and Resilience UG programmes)
- We would expect to be able to offer this programme to our graduating RAF cohorts from the BA Organisational Capability Development; BA Protective Security Management; BA Organisational Security Management and to publicise throughout our security and associated networks.

Do applicants required a Disclosure and Barring Service (DBS) Check?

No

Opportunities for students on successful completion of the programme

On successful completion of this award, students from all backgrounds will find their employment prospects enhanced and their understanding of the multiple facets of CI security and resilience significantly deepened. Managers will have gained the requisite knowledge and analytical skills to enable them to perform at higher management levels in their organisations; recent graduates or people employed outside the resilience sector are more likely to be able to obtain employment in the component industries; and current employees will be better equipped to seek promotion. All graduates will have developed transferable skills that can be used in a wide range of employment roles. These will include security management in all sectors that contribute to the CNI, in both public and private sectors. Examples may include; Transport Security planning and management or infrastructure protection and management in the financial sector. As many sectors are elements of or are influenced by CNI security structures the potential opportunities vary significantly.

Recognition of Prior Learning

Previous study, professional and / or vocational experiences may be recognised as the equivalent learning experience and permit exemption from studying certain modules. Please refer to our [Credit Accumulation webpages](#) for further guidance.

There may be some applicants who are able to use Accredited Prior Learning (APL) to apply for exemptions for some of the MSc modules, dependent on the level of the prior learning, award or certification and the ability to map them to the Modules. All APL assessments will be conducted by a formally constituted Credit Accumulation Transfer Scheme (CATS) Committee, in accordance with AQD Regulation on the Credit Accumulation and Transfer Scheme dated June 2011.

Student Support

During the course of their studies, students will be supported in the following ways:

- At the start of their studies all students will receive a full **induction** to the programme which will include introduction to the staff responsible for delivering the course, and access to library and IT facilities
- The **Programme Handbook** will outline the exact nature of the course and how it is structured, including the availability of option modules
- Each student will be allocated a **Personal Tutor** who will support their academic development, be able to advise and guide them with their studies and, where necessary, give advice on study options
- Students will be able to access our full range of **support services**, including the Learning Development Unit for skills and study support, the Library, the Careers and Employability Team, Student Finance Team, Accommodation and Counselling Services

Progression Board

At the end of the first academic year, there will be a progression board where students will be assessed and if both first year modules (SE701 and SE709) have been passed, then the student will progress to year two. If one or both modules are failed, then there will be the opportunity for referral work.

Referral Opportunities

As with any award at Buckinghamshire New University, if a student has not received a pass mark (normally 40%) for a module or piece of assessment, they may be required to be reassessed in the component(s) that they have failed.

For full details of assessment regulations for all taught programmes please refer to our Results webpages.

Appendices

Quality Assurance

Awarding Body:	Bucks New University
Language of Study:	English
QAA Subject Benchmark Statement(s):	Masters Degrees in Business Management (2015)
Assessment Regulations:	<i>Academic Assessment Regulations</i> , accessible via the Academic Advice webpages (https://bucks.ac.uk/students/academicadvice)
Does the Fitness to Practise procedure apply to this programme?	No
Date Published / Updated:	September 2018

Other awards available on programme (Exit Qualifications)

Please refer to the *Academic Qualifications Framework* for Exit Qualifications recognised by the University and credit and module requirements.

Name of Exit Qualification:	Postgraduate Certificate (PGCert)
Full name of Qualification and Award Title:	PG Cert Critical Infrastructure Security
Credits requirements:	60 Credits
Module requirements:	SE701 Threat Risk and Impact Perspectives SE709 Areas of Critical Infrastructure Security
Learning Outcome	
Rationalise and determine the relative value of threat risk and impact analysis and management as contributors to CI resilience	
Identify and diagnose conflicts and linkages in CI security disciplines	
Synthesise theoretical and applied approaches to threat, risk and impact analysis and management to resolve organisational strategy issues	
Critically evaluate the requirements and effectiveness of CI elements in discrete and connected capacities	
Name of Exit Qualification:	Postgraduate Diploma (PGDip)
Full name of Qualification and Award Title:	PG Diploma Critical Infrastructure Security
Credits requirements:	120 Credits
Module requirements:	SE 701 Threat, Risk and Impact Perspectives SE 709 Areas of Critical Infrastructure SE 710 Critical Infrastructure Connectivity and Vulnerability SE 711 Critical Infrastructure Security Strategies
Learning Outcome	
Evaluate the issues related to stakeholder theories and their specific applicability to CI operations.	

Analyse concepts of competition and primacy of CI organizations

Evaluate and analyse security strategic planning processes across all CI activity

Analyse and evaluate organisational capabilities in strategic management and development related to resilience

Formulate methodologies for future development of strategy in relation to CI sectors and influences

Analyse and synthesise strategy management and planning theories in relation to CI