MAGnUS Training Course

University of Derby
UK

July 1st – 4th, 2019

EU Partners

Partners - Russia & Azerbaijan

Astrakhan State University

Voronezh State University

Baku Engineering University

Wider Objective

- To Share best practice of MSc Design
- From QAA Benchmark Statements
- Through Programme Learning Outcome Statements
- To Module Learning Outcome Statements

- Validation Documentation – What is it?
- How is it structured?
- Validation Events

Validation Documentation

Validation Document

Programme Specification

Module Specifications

What are these??

Validation Document   **Why?**

Programme Specification   **What?**

Module Specifications   **How?**

Purpose of the Validation Document?

"To inspire the Validation Panel that the Development Team have carefully thought about the Proposed Programme(s)"

How?

https://corp.inspire.com

Validation Document – Section Headings

"An evaluative summary of the development process"

1. **Academic Rationale** — Why MagnUS?
2. **Market Research** — How & Where?
3. **Consultation** — Who & When?
4. **Structure and Content** — **Tues & Wed**
5. **QAA/Professional Benchmark –** **Core themes**
6. **Learning, Teaching** — **Thursday**
7. **Assessment** — **Thursday**

Validation Document – Section Headings

8. Programme Management

Student Support Arrangements University Specific

- The Student Journey:
    - Induction
    - Academic guidance
    - Supervisory arrangements
    - Academic tutorial support
    - Welfare and pastoral support
    - Students with special needs
    - Careers information and guidance
    - Facilitating student progression
- Distinct features of the Programme – MAGnUS?
- Quality Management

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9. Learning Resources

Building
- classroom and lab facilities
- projectors, whiteboards
- video recorder, etc

Computer Network and Infrastructure
- User names, password
- network storage
- Software

Staff – to cover the modules

10. Implementation Strategy

TEF Gold Teaching Excellence Framework

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Programme Specification

SPECIFICATIONS

Programme Specification Purpose

Information about the Programme of Study for:

- Students
- Staff
- Quality Manager
- External Examiner
- Timetabler
- Resource Manager/Head of Dept.
- Professional Body - **British Computer Society/IEEE**

How?

Learning Outcomes

With reference to:

- **The knowledge and understanding** that a student will be expected to have upon completion;

- **Intellectual skills** such as an understanding of methodologies or ability in critical analysis;

- **Subject-specific skills** such as practical skills;

- **Transferable skills**: such as communication, numeracy, the use of information technology and learning how to learn.

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TEF Gold Teaching Excellence Framework

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Programme Specification - Contents

Programme Specification Contents

Programme Title

Award Title & Interim Awards

Mode of Study

Start & Review Date

Awarding Institution

Dept Managing the Programme

Partners delivering the Programme
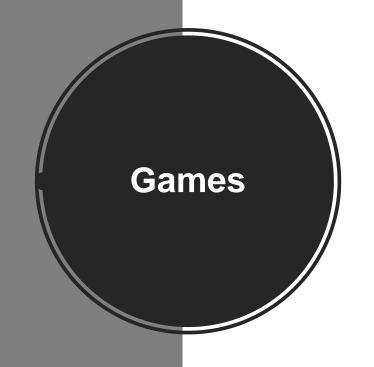
Relevant Subject Benchmark Statements

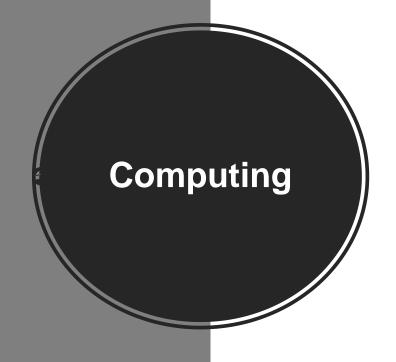External Accreditation

JACS code See next slides

Last Update

Programme Aims

Games

3	I590	Health informatics not elsewhere classified	Related match	100809	bioinformatics
1	I600	Games	Close match	101267	computer games
2	I610	Computer games programming	Related match	101267	computer games
2	I610	Computer games programming	Close match	101020	computer games programming
2	I620	Computer games design	Related match	101267	computer games
2	I620	Computer games design	Close match	101268	computer games design
2	I630	Computer games graphics	Related match	101267	computer games
2	I630	Computer games graphics	Close match	101019	computer games graphics
3	I700	Computer generated visual & audio effects	Related match	100363	computer animation and visual effects
1	I710	Computer generated imagery	Close match	100363	computer animation and visual effects
3	I900	Others in Computer sciences	Related match	100366	computer science
3	I990	Computer sciences not elsewhere classified	Related match	100366	computer science

Computing

2	I150	Multimedia computing science	Close match	100737	multimedia computing science
1	I160	Internet	Close match	100373	internet technologies
2	I161	e-business	Related match	100360	business computing
2	I161	e-business	Close match	100738	e-business
3	I190	Computer science not elsewhere classified	Related match	100366	computer science
2	I200	Information systems	Related match	100360	business computing
2	I200	Information systems	Related match	100361	business information systems
2	I200	Information systems	Related match	100362	business information technology
2	I200	Information systems	Related match	100385	computer forensics
2	I200	Information systems	Related match	100367	computing and information technology
2	I200	Information systems	Close match	100371	information systems
2	I200	Information systems	Related match	100372	information technology
1	I210	Information modelling	Close match	100751	information modelling
4	I220	Systems design methodologies	Related match	100821	requirements engineering
4	I220	Systems design methodologies	Related match	100753	systems analysis and design
2	I230	Systems analysis & design	Related match	100821	requirements engineering
2	I230	Systems analysis & design	Close match	100753	systems analysis and design
1	I240	Databases	Close match	100754	databases
2	I250	Systems auditing	Related match	100385	computer forensics
2	I250	Systems auditing	Close match	100756	systems auditing
2	I260	Data management	Close match	100755	data management
2	I260	Data management	Related match	100372	information technology
1	I270	Intelligent & expert systems	Close match	100757	intelligent systems
4	I290	Systems analysis & design not elsewhere classified	Related match	100821	requirements engineering
4	I290	Systems analysis & design not elsewhere classified	Related match	100753	systems analysis and design
2	I300	Software engineering	Related match	100821	requirements engineering
2	I300	Software engineering	Close match	100374	software engineering
3	I310	Software design	Related match	100374	software engineering
1	I320	Programming	Close match	100956	programming
3	I321	Procedural programming	Related match	100956	programming
1	I322	Object-oriented programming	Close match	100960	object-oriented programming
3	I323	Declarative programming	Related match	100956	programming
3	I390	Software engineering not elsewhere classified	Related match	100374	software engineering
1	I400	Artificial intelligence	Close match	100359	artificial intelligence
1	I410	Speech & natural language processing	Close match	100961	natural language processing
1	I420	Knowledge representation	Close match	100963	knowledge and information systems
1	I430	Neural computing	Close match	100966	neural computing
1	I440	Computer vision	Close match	100968	computer vision
1	I450	Cognitive modelling	Close match	100989	cognitive modelling
1	I460	Machine learning	Close match	100992	machine learning
3	I461	Automated reasoning	Related match	100359	artificial intelligence
3	I490	Artificial intelligence not elsewhere classified	Related match	100359	artificial intelligence

Programme Specification Contents

Programme Aims

Programme Learning Outcomes

- Knowledge and understanding
- Intellectual skills
- Subject specific skills
- Transferable skills

European Diploma Supplement

European Diploma Supplement (EDS)

standardised description of the nature, level, context, content and status of the studies completed:

1. the holder of the qualification

2. the qualification

3. its level and function

4. the contents and results gained

5. certification of the supplement

6. details of the national higher education system concerned (provided by the **National Academic Recognition Information Centres (NARICs)**

7. any additional relevant information.

https://ec.europa.eu/education/diploma-supplement_en

Available Already

Graduates in all the countries taking part in the **Bologna Process** have the right to receive the Diploma Supplement
- automatically
- free and
- in a major European language.

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EDS benefits

For students:

- a qualification that is more readable and easily comparable abroad;

- a precise description of their academic experience and the competencies acquired during their studies;

- easier access to opportunities for work or further studies abroad.

EDS Benefits

For higher education institutions:

- more transparent qualifications

- common framework: continued national/institutional autonomy, accepted throughout Europe;

- informed judgements that can be understood in other educational contexts;

- greater visibility of the institution abroad;

- enhanced employment prospects for their graduates

- time savings – by answering many of the questions commonly asked of institutions about the content and portability of their qualifications.

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How to improve the internationalisation of HE?

The **Bologna Process** is an intergovernmental cooperation 48 European countries in the field of higher education.

- Public authorities
- Universities
- Teachers
- Students
- Stakeholder associations

- Employers
- Quality assurance agencies
- International organisations
- Institutions
- European Commission

TOP 30
GUARDIAN
UNIVERSITY GUIDE 2019

What is the Main Focus?

1. 3 Cycle Degrees

2.

3.

See Bologna Progress Report

Writing Learning Outcomes

MSc Level 7	Critical Analysis, Application, Innovate
3rd Year Level 6	Critical Evaluate
	Calculate
2nd year Level 5	Discuss, Solve
	Describe, Explain
1st Year Level 4	Define

Create:
invent, improve, innovate...

Evaluate – appraise, critically evaluate, judge, conclude, reflect, review

Synthesize: collect, compose, construct, categorise, comment

Analyse - calculate

Apply - illustrate, interpret, discuss, solve suggest

Understand – describe, explain, recall, define, select, locate

Remember

Levels of Study

At Level 7 (Masters) We are looking for

- Critical Evaluation,

- Critical Analysis,

- Critical Review

- Critical Thinking

What does critical mean?

(**of a text**) incorporating a detailed and scholarly analysis and commentary

(**of a situation or problem**) having a decisive or crucial importance in the success, failure, or existence of something:

Programme Learning Outcomes

4 Areas

1. **Knowledge and Understanding**
2. **Intellectual Skills**
3. **Practical and Subject-Specific Skills**
4. **Transferable Skills**

Knowledge and Understanding

Students should be able to demonstrate a sound knowledge and understanding of:

A1 the state of the art and trends in mobile platform tools, technologies and architecture.

A2 design, develop, evaluate and test secure and efficient mobile applications for the most popular mobile platforms.

A3 conducting research into an area of mobile software design, development, testing, security, and entrepreneurship.

A4 mobile devices and mobile device applications including educational, medical and commercial business needs and market opportunities.

A5 the processes required to initiate, establish, and operate a successful and profitable mobile device software, or security, enterprise.

A6 the principles and issues regarding porting applications from one platform family to another.

Intellectual Skills

Students should be able to demonstrate an ability to:

B1. Analyse and solve a range of complex problems in the field of Mobile Software, Development, Security and entrepreneurship.

B2. Critically analyse current issues and developments in Mobile Software, porting issues, interface design, and security methods.

B3. Apply innovative and novel methods in solving problems, making use of knowledge of the state of the art.

B4. Know, understand and have a critical awareness of the mobile software development tools, techniques and technologies

B5. Understand and recognise compliance issues that impact on the management of a mobile device software enterprise.

B6 Adopt a self critical approach.

B7. Engage in life long learning so as to remain at the forefront of the academic discipline.

Practical and Subject-Specific Skills

Students should be able to demonstrate an ability to:

C1. Identify research issues in the field of mobile computing, emerging architectures, and service delivery models.

C2. Undertake research, and source, organise, and abstract meaning from rapidly changing commercial mobile software environments and technologies.

C3. Practically apply appropriate theories, and principles to the design and implementation of solutions of mobile related software and enterprise problems.

C4. Successfully plan, manage and implement a research project.

C5. Make decisions concerning the commercial advantages of mobile architectures and applications.

C6. Analyse and formulate solutions to complex network security problems.

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Transferable Skills

Students should be able to demonstrate an ability to:

D1. Acquire, evaluate and build upon complex and sometimes conflicting information relating to recent mobile technology advances.

D2. Apply new knowledge in novel and unfamiliar situations and in a cross-disciplinary manner.

D3. Understand complex ethical values and issues pertaining to the use of information

D4. Learn and work independently

D5. Communicate complex ideas using appropriate means

D6. Become a reflective learner.

D7. Integrate ideas and practice in a cross disciplinary manner.

Curriculum Map

Module Title	Knowledge & Understanding						Intellectual Skills							Subject Specific Skills							Transferable Skills						
	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	C5	C6	C7	D1	D2	D3	D4	D5	D6	D7
Independent Scholarship			✓									✓	✓	✓	✓		✓					✓	✓	✓	✓	✓	✓
Client Side Development	✓	✓	✓		✓		✓	✓		✓	✓	✓	✓		✓					✓				✓	✓	✓	
Emerging Architectures	✓		✓		✓		✓	✓				✓	✓	✓										✓	✓	✓	
Entrepreneurial Management			✓		✓	✓	✓				✓	✓	✓		✓		✓					✓	✓	✓	✓		✓
Network Architecture and Security	✓		✓	✓	✓		✓	✓				✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓
Mobile Software Design & Architecture	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓		✓		✓			✓			✓	✓	✓	
Mobile Software Development	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓		✓	✓					✓			✓	✓	✓	
Mobile User Experience	✓	✓	✓				✓	✓	✓	✓		✓	✓			✓						✓		✓	✓	✓	✓
Studying at Masters Level and Research Methods			✓									✓	✓	✓	✓		✓					✓	✓	✓	✓	✓	✓

Mapping Key Skills

Module Title	Application of Number	Communication	Information Technology	Management of Own Learning	Problem Solving	Working with Others
Independent Scholarship	✓	✓	✓	✓		
Client Side Development			✓	✓	✓	
Emerging Architectures	✓		✓	✓	✓	✓
Entrepreneurial Management	✓	✓	✓	✓	✓	✓
Network Architecture and Security	✓		✓	✓	✓	
Mobile Software Design & Architecture	✓		✓	✓	✓	
Mobile Software Development	✓		✓	✓	✓	
Mobile User Experience		✓	✓	✓	✓	
Studying at Masters Level and Research Methods	✓	✓	✓	✓	✓	✓

Break

Bologna - Main Focus

1. The introduction of the bachelor/master/doctorate systems

2. Strengthened quality assurance and

3. Easier recognition of qualifications and periods of study

Bologna

Why is it needed?

Widely differing education and training systems in Europe have traditionally made it hard for Europeans to use **qualifications from one country to apply for a job or a course in another**. Increased compatibility between education systems makes it easier for students and job seekers to move within Europe.

At the same time, the Bologna reforms help to make European universities and colleges more competitive and attractive to the rest of the world.

The Bologna Process also supports the **modernisation of education and training systems** to make sure these meet the needs of a changing labour market. This is important as the proportion of **jobs requiring high skills** grows, and the demand for **innovation and entrepreneurship** increases.

What has been done so far?

A lot of progress has been made in implementing the reforms, as shown by the regular **reports**.

In May 2018, the Education Ministers met in **Paris** and adopted a '**Communiqué**' on their priorities for the coming years.

The Paris Communiqué outlines the joint vision of the 48 ministers for a more ambitious European Higher Education Area beyond 2020, calling for:

an inclusive and innovative approach to learning and teaching;

for integrated transnational cooperation in higher education, research and innovation;

for securing a sustainable future for our planet through higher education.

Bologna Proposal

"…to drive positive change. And this is why we have been working on proposals to create a European Education Area by 2025"   Paris Report, 2018, p3

Ambition:

"… enable EU Member States to intensify and accelerate their cooperation in areas such as mobility, multilingualism, innovation and mutual recognition of diplomas, and thus also to provide inspiration to non-EU countries to follow". Paris Report, 2018, p4

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Bologna

Systematic efforts to improve the relationship between higher education and the labour market still need to be better developed and implemented. Action could include using labour market forecasts, involving employers in curriculum planning and higher education governance, providing incentives to include work placements in higher education programmes, improving career guidance services, as well as encouraging student mobility.

What is the Main Focus?

1. 3 Cycle Degrees
   - Bachelors
   - Masters
   - PhD
2. Recognition of qualifications
3. Quality Assurance
4. Learning and Teaching
5. Open HE Access
6. Employability
7. Internationalisation

Magnus at Derby

The role of UoD in Magnus

needs analysis to ensure that new programmes will meet the needs of modern business environment

The EU partners will present trends in mobile and game development.

❖ best European practices for both programme development and project management.

❖ study of the practices of modular programme design

❖ Teaching & Learning Methods

MAGnUS 3 tracks

Mobile applications in education

Mobile application in healthcare

Game development

30 ECTs

Students encouraged to find a placement

They have to:

Agree a project with company with objectives

Write a reflective account of the placement:
- ❖Tools
- ❖Techniques
- ❖Processes
- ❖Results Were the objectives met?
- ❖Impact