UNIVERSITY OF BRADFORD
Faculty of Engineering and Informatics
School of Electrical Engineering and Computer Science
School of Media Design and Technology
Programme titles: MSc Informatics by Research / MSc Computing by Research / MSc Creative Technology by Research / MSc Digital Media by Research

Awarding and teaching institution: University of Bradford
Final award: Master of Science (MSc) [Framework for Higher Education Qualifications Level 7]
Postgraduate Certificate (PG Cert)
Postgraduate Diploma (PG Dip)

Programme titles:
Informatics by Research
Computing by Research
Creative Technology by Research
Digital Media by Research

Programme accredited by: n/a
Duration: 1 Year Full time – September (semester 1) or January (Semester 2) or 2 Years Part time – September only

Subject benchmark statement: Computing
Date produced: May 2004
Last updated: June 2014

Introduction

Research in the Faculty of Engineering and Informatics (SEI) takes a prime position in the life of the school, the overwhelming majority of academic staff having contracts that include research. There is a strong spirit of innovation in the school due to the long experience of leading-edge research in both core computer science and in collaborative interdisciplinary work, at the boundaries between computing and application areas that are also dynamic research fields within the university. Notable strengths in core computing activities include computer networks, performance engineering, scheduling and quantum computing. Interdisciplinary collaborations span the range from the arts to engineering and mathematics, particular areas of strength being hybrid work with the creative arts and humanities areas and extensive joint work with telecommunications engineering specialists.

The Faculty of Engineering and Informatics has close links with industry, national and international government, non-government, and academic organisations/institutions. The school has developed these innovative programmes to meet the needs of the modern computing, software, Internet, mobile and telecommunication industries. Each MSc is a flexible programme of demand-based research supported by an individually tailored system of learning material; hence, are designed for highly motivated full-time/part-time research students; graduates employed within industries or organisations. You will work with a university specialist to complete a project of Masters quality which may also deliver real benefit to your industry/organisation. This close alignment with the job/personal interest maximises
your input to the learning programme while minimising the off-site commitment (for industry).

The programmes allow the company/organisation to get maximum benefit from the continuing professional development of its key employees. The programmes have been devised with reference to the Computing subject benchmarks and the framework for Higher Education Qualifications in England and Northern Ireland.

Programme Aims

The aims of the programmes are to allow you to:

- Develop and enhance personal research, technical and motivational skills;
- Master the understanding and application of modern specialist tools and techniques in the fields of Computing, Creative Technology, Digital Media, and Informatics;
- Learn from expert guidance in up-to-date knowledge;
- Improve processes and products through the application of world-class professional knowledge and expertise;
- Bring academic standards of research into the workplace;
- Provide learning opportunities tailored to individual and company requirements;
- Identify potential efficiency and cost savings.

These aims are achieved by a focus on appropriate state of the art technology such as reliability and robustness, virtual prototyping, product and process improvement, quality improvement, cost reduction and shorter development times by the application of the best techniques from total quality excellence, statistical analysis, software development, computer modelling, simulation, and testing to achieve total customer satisfaction through continuous improvement of methods, products and processes.

Programme Learning Outcomes

Research study in Computing, Engineering, Informatics and Media is an interactive process usually involving information gathering, feasibility testing, planning, analysis, design, implementation, operation and maintenance and decommissioning with a view to minimising environmental impact. As such, you will develop the following:

LO1. Mastery of up-to-date knowledge, understanding and discipline skills relevant to your chosen research area.
LO2. Critical awareness of the key issues in research skills, methodologies and development.
LO3. Production of new research material and critical evaluation of existing work both within the organisations and wider public domain.
LO4. Enhanced skills in the presentation and defence of work of advanced standing.
The Curriculum

The MSc Informatics by Research, Computing by Research, Creative Technology by Research, Digital Media by Research are project-based research degrees with individually tailored tuition provided by one or more supervisors. The major element of work comprises the workplace- or demand-based research project conducted over the duration of the programme. You will also be encouraged to follow appropriate University enhancement modules. This learning support forms an integral part of the programme.

Full-time: The programme is structured to take one academic year as shown in Tables 1 and 2 below. Taught core modules totalling 60 credits will be undertaken during Semesters 1 (September to January) and 2 (January to May). A further 60 credits will consist of optional modules chosen from the SEI module catalogue; these modules should normally be at FHEQ Level 7, however, students may select up to 20 credits of FHEQ Level 6 modules if appropriate. During Semesters 1 and 2 the Research Project modules parts 1 and 2 are carried out in conjunction with one of the research groups in the School, with the Research Project part 3 module to be completed over the Summer; the expectation is that every graduate from the degree will submit/publish at least one conference/workshop paper as part of the research.

Part-time: The modules of the part-time curriculum follow that of the full-time provision with the exception that the duration is two academic years, as shown in Table 3 below. This will consist of the both the taught core and optional modules totalling 120 credits being undertaken during Semesters 1 & 2 over the two years, which comprises the Research Projects parts 1 and 2 taken in both Years 1 and 2 respectively, and part 3 to be completed over the summer in the final year.

Table 1: Programme Structure for Full-time September (semester 1) start:

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Credit</th>
<th>Sem</th>
<th>Level</th>
<th>Module Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM0426D</td>
<td>20</td>
<td>1</td>
<td>7</td>
<td>Research Project Part 1 (MSc by Research)</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>1</td>
<td>7 (6)</td>
<td><strong>Option:</strong> to be chosen from SEI modules</td>
</tr>
<tr>
<td>EM4083D</td>
<td>20</td>
<td>2</td>
<td>7</td>
<td>Research Skills and Methodologies</td>
</tr>
<tr>
<td>CM0427D</td>
<td>20</td>
<td>2</td>
<td>7</td>
<td>Research Project Part 2 (MSc by Research)</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>2</td>
<td>7 (6)</td>
<td><strong>Option:</strong> to be chosen from SEI modules</td>
</tr>
<tr>
<td>CM0403Z</td>
<td>60</td>
<td>DISS</td>
<td>7</td>
<td>Research Project Part 3 (MSc by Research)</td>
</tr>
</tbody>
</table>

Table 2: Programme Structure for Full-time January (semester 2) start:

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Credit</th>
<th>Sem</th>
<th>Level</th>
<th>Module Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM0426D</td>
<td>20</td>
<td>2</td>
<td>7</td>
<td>Research Project Part 1 (MSc by Research)</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>2</td>
<td>7 (6)</td>
<td><strong>Option:</strong> to be chosen from SEI modules</td>
</tr>
<tr>
<td>EM4083D</td>
<td>20</td>
<td>2</td>
<td>7</td>
<td>Research Skills and Methodologies</td>
</tr>
<tr>
<td>CM0427D</td>
<td>20</td>
<td>1</td>
<td>7</td>
<td>Research Project Part 2 (MSc by Research)</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>1</td>
<td>7 (6)</td>
<td><strong>Option:</strong> to be chosen from SEI modules</td>
</tr>
</tbody>
</table>

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Table 3: Part-time Programme Structure for Part-time **September (Semester 1)** start only:

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Credit</th>
<th>Sem</th>
<th>Level</th>
<th>Module Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>1</td>
<td>7 (6)</td>
<td><em>Option</em>: to be chosen from SEI modules</td>
</tr>
<tr>
<td>CM0426D</td>
<td>20</td>
<td>2</td>
<td>7</td>
<td>Research Project Part 1 (MSc by Research)</td>
</tr>
<tr>
<td>Year 2</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>CM0427D</td>
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<td>1</td>
<td>7</td>
<td>Research Project Part 2 (MSc by Research)</td>
</tr>
<tr>
<td>CM0403Z</td>
<td>60</td>
<td>DISS</td>
<td>7</td>
<td>Research Project Part 3 (MSc by Research)</td>
</tr>
</tbody>
</table>

The curriculum may change, subject to the University's programme approval, monitoring and review procedures.

**Assessment Regulations**

This Programme conforms to the standard University Assessment Regulations for Postgraduate Programmes which are available at the following link:

http://www.bradford.ac.uk/aqpo/ordinances-and-regulations/

**Teaching and Assessment Strategies**

You will experience a wide range of teaching and learning environments within the University or in your workplace. Your research will be supported by regular meetings with your supervisor whilst you will be attending for taught modules. The taught modules will be assessed in usual manner based on university regulations.

A significant part of the formal assessment is the examination of the Research thesis, which is supported by the submission of Quarterly Reviews. The thesis is examined based on the thesis document, demonstration, presentation and answering questions about the work and extending the work of the research group.

The Research Project should focus on applying the methodologies and tools of total quality excellence, intelligent system design, computer modelling and simulation, virtual reality, Internet and mobile computing, multimedia system design, image processing and testing to improve an aspect of product research, planning, analysis, design or development. Learning is then achieved by the student, guided by the University supervisor. Supervision, guidance and support for the duration of the Research Project is provided from the university and from the company/organisation by a team of supervisors that may consist of:

- University supervisor, who has expertise in the research area of the project
- Company supervisor or line manager, who also acts as project champion within the company. If the project does not have a company sponsor, an internal supervisor from the university plays a similar role.

**Admission Requirements**

The University welcomes applications from all potential students regardless of their previous academic experience; offers are made following detailed consideration of each individual application. Most important in the decision to offer a place is our assessment of a candidate’s potential to benefit from their studies and of their ability to succeed on this particular programme. Entrance requirements for each programme will vary but consideration of your application will be based on a combination of your formal academic qualifications and other relevant experience.

If you have prior certificated learning or professional experience which may be equivalent to parts of this programme, the University has procedures to evaluate this learning in order to provide you with exemptions from specified modules contained within the curriculum. Please talk to us if you do not fit the standard pattern of entry qualifications. We are continually reviewing and developing our practices and policies to make the University more inclusive, but if you are disabled we may need to make some adjustments to make sure that you are not disadvantaged. We would advise you to contact the programme leader before you apply to discuss these.

Each student is selected on an individual basis. The area of research is on the demand of the company or organisation or personal interest within the framework of the research groups of the School of Electrical Engineering and Computer Science. For admission to the MSc by Research programme a candidate should normally have a UK Honours degree (2:2) or equivalent in computing, a physical science or engineering or mathematics. Applicants should specify in which area they wish to do research; full details of the research areas of the School can be found at http://www.brad.ac.uk/ei/electrical-engineering-and-computer-science/research/

Candidates applying to the programme with non-standard qualifications will be judged on an individual basis using the University’s RPL procedures. In addition, a test of written and spoken English normally needs to have been passed at grade 6.0 for IELTS or 550 for TOEFL (or 250 for the computer-based test).

**Learning Resources**

The JB Priestley Library on the city campus and our specialist library in the School of Management provide a wide range of printed and electronic resources to support your studies. We offer quiet study space if you want to work on your own, and group study areas for the times when you need to discuss work with fellow students. Subject librarians for each School provide training sessions and individual guidance in finding the information you need for your assignment, and will help you organise your references properly.

Student PC clusters can be found in both our libraries and elsewhere on the campus. Many of these are open 24/7. You can also use the University's wireless network to access the internet from your own laptop. Most of our journals are available online (both on and off campus), and you can also access your University email account, personal information and programme-related materials this way.
Staff are on hand during the daytime to help you if you get stuck, and there is a 24/7 IT helpline available.

Student Support and Guidance

All students admitted to the School of Engineering and Informatics go through a process of induction that includes detailed talks by the Dean and Head of School.

Afterwards, ongoing support for students is provided in the form of one-stop facilities located at the School Student Support Office (SSO) in Horton Building open throughout the day during term, and in the mornings and afternoons outside term.

Support for registered students is also provided 24/7 via the intranets of the School and the School’s Technical Support. The School also uses the University’s Virtual Learning Environment (VLE) to support students via their individual modules.

Programme Team

Support for you personally and in your programme of study, will be provided both by the University and the Programme Team. The School will ensure that there is someone available with whom you feel comfortable to help and support you. You will be provided with a comprehensive series of handbooks that you can consult on a range of learning issues and your programme tutors will be available to consult on subject specific queries.

All students on our MSc by Research will be allocated a personal tutor (usually your project supervisor) who provides support and guidance on matters relating to learning, teaching, and student’s academic progress, pastoral support and personal development planning (PDP). There are tutors in the School who deal with issues where other social factors (relating to gender or disability for example) may have an impact on a student’s academic performance. The Staff Student Liaison Committee gives the opportunity for students to give formal feedback to the Programme Tutor and/or School about curricular issues and the general running of the programme.

Students’ Union

We value the feedback provided by students and collaborate with the Students’ Union, through a system of student representatives and formal Staff Student Liaison Committees, so that any issues you wish to raise are addressed rapidly.

The Students’ Union provides professional academic representation and advice. The Students’ Union and the University of Bradford work in partnership to provide confidential counselling and welfare services where you can get help with any aspect of your personal or academic life. Student Financial and Information Services (part of the Hub) will provide you with information about a diverse range of issues such as council tax, personal safety and tourist information. International Students can access a range of additional advice and support services through the Student’s Union.

The Hub, Student Support Centre
The Hub, Student Support Centre provides a central reception where students can receive information, advice and guidance on a whole range of topics about their life at University. The Hub is located in the Richmond Building adjacent to the Atrium.

The teams located within The Hub:
- Accommodation
- Admissions
  - Education Liaison
  - Enquiries
- Student Administration and Support
  - Bursaries and Financial Support
  - Finance and Credit Control Group
  - Payzone
  - Records and Tuition Fees
- International Office
- Customer Service Team

www.brad.ac.uk/hub
+44 1274 232233

**Employability and Career Development**

The University is committed to helping students develop and enhance their employability profile, commitment towards a career pathway(s) and to implementing a career plan.

Professional career guidance and development support is available throughout your time as a student and as a graduate from Career Development Services. The support available from Career Development Services includes a wide range of information resources, one to one appointments, a weekly workshop programme, a mentoring programme, graduate recruitment and careers fairs, plus information and help to you find part time work, summer work placements, internship programmes and graduate/postgraduate entry vacancies. In addition, some students will receive seminars and workshops delivered by Career Development Services as part of their programme of study. All students are encouraged to access Career Development Services at an early stage during their studies and to use the extensive resources available on their web site www.careers.brad.ac.uk.

Career Development Services annually undertakes a survey of all postgraduates to find out their destination six months after graduation. The survey gathers data on the employment and further study routes graduates have entered and a range of other information including job roles, name and location of employers, salary details etc. The survey findings for each programme of study are presented on the programme information pages on the University website and via Career Development Services’ website www.careers.brad.ac.uk.

**Learner Development Unit for Academic Skills Advice**

For postgraduate students on taught programmes who are looking to improve their marks during their time at university, study skills and maths advice is available to all regardless of degree discipline. Students can access a programme of interactive workshops and clinics which is delivered throughout the year. This is in addition to
our extremely popular face-to-face guidance from our advisers, who also offer a wide range of online and paper based materials for self-study.

http://www.bradford.ac.uk/academic-skills/index.php

Disability

Disabled students will find a supportive environment at Bradford where we are committed to ensuring that all aspects of student life are accessible to everyone. The Disability Service can help by providing support, advice and equipment to help you get the most out of your time at Bradford. It is a place where you can discuss any concerns you may have about adjustments that you may need, whether these relate to study, personal care or other issues. For more information contact the Disability Service by phoning: 01274 233739 or via email: disabilities@bradford.ac.uk

University policies and initiatives

Ecoversity

Ecoversity is a strategic project of the University which aims to embed the principles of sustainable development into our decision-making, learning and teaching, research activities campus operations and lives of our staff and students. We do not claim to be a beacon for sustainable development but we aspire to become a leading University in this area. The facilities we create for teaching and learning, including teaching spaces, laboratories, IT labs and social spaces, will increasingly reflect our commitments to sustainable development. Staff and student participation in this initiative is crucial to its success and its inclusion in the programme specification is a clear signal that it is at the forefront of our thinking in programme development, delivery, monitoring and review. For more details see www.bradford.ac.uk/ecoversity/

Further Information

For further information, please check the University prospectus or contact Admissions.

The Admissions Office
The University of Bradford
Richmond Road
Bradford, BD7 1DP
UK
+44 (0)1274 233054
http://www.brad.ac.uk/courses/

The Recruitment and Marketing Office
Faculty of Engineering and Informatics
The University of Bradford
Horton Building, Richmond Road
Bradford, BD7 1DP,UK
+44 (0)1274 234286
masters@scim.brad.ac.uk
http://www.bradford.ac.uk/ei/electrical-engineering-and-computer-science/about/computing/courses/
http://www.brad.ac.uk/university/pgpros/informatics-apply.php
Disclaimer

The content of this programme specification may change, subject to the University's regulations and programme approval, monitoring and review procedures.