Programme Specification
MSc Building Information Modelling and Management

Date of Publication to Students [2015]

NOTE: This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes advantage of the learning opportunities that are provided. More detail on the specific learning outcomes, indicative content and the teaching, learning and assessment methods of each module can be found (1) at [http://www.bcu.ac.uk/built-environment], (2) in the Module Specifications and (3) in the Student Handbook.

The accuracy of the information contained in this document is reviewed by the University and may be checked within independent review processes undertaken by the Quality Assurance Agency.

Awarding Institution / Body:	**Birmingham City University**
Teaching Institution:	**Faculty of Computing, Engineering and Built Environment** **Birmingham City University**
Interim Awards and Final Award:	**PG Certificate, PG Diploma, MSc**
Programme Title:	**MSc Building Information Modelling and Management**
Main fields of Study:	**Information management** **Design management** **Construction management** **Facilities Management** **Organisational management**
Modes of Study:	**Full & Part time**
Language of Study:	**English**
UCAS Code:	**Not applicable**
JACS Code:	**Not applicable**

Professional Status of the programme (if applicable):

This programme will seek accreditation from Royal Institution of Chartered Surveyors (RICS), the Chartered Institute of Building (CIOB) and the The Chartered Institute of Architectural Technologists (CIAT)

Relevant subject benchmark statements and other external reference points used to inform programme outcomes:
Master Award of Business and Management

Programme philosophy and aims

The construction industry is moving into a new era due to the availability of digital building information systems and the need for more efficient and effective working to meet the changing requirements of clients. In a rapidly changing and progressively harder industry there is an ever increasing need to work collaboratively and more efficiently by continually reviewing and improving processes. Integrating delivery processes must be at the forefront of the industries agenda to work towards a truly collaborative approach to design, cost, construct and maintain the buildings we are producing. Clients have become more demanding, the regulatory framework has become more complex, and technology in buildings plays an increasingly important role. Furthermore, the construction industry is facing the challenge of globalisation and climate change. The construction industry requires a broadly educated professional who can lead these development and face the challenges of the future.

This MSc Building Information modelling and Management seeks to support and also lead the construction industry through the implementation of Integrated Project Delivery, supported by the adoption of Building Information Modelling, to make the industry more effective in its delivery, more economically viable in its business and more sustainable in its practice. The course plans to take students on a learning journey with a strong awareness of their own capabilities and styles so that they can develop the capacity and skills to lead change in their organisations and to transfer knowledge effectively. This programme will challenge the students to question their current thinking and the practices adopted in the face of a rapidly changing construction industry, and develop their abilities and skills to be innovative and creative in solving unique problems.

The central aim of the programme is to provide students with the capability *to integrate construction project delivery processes through collaborative practices and Building Information Modelling (BIM) to promote an effective, efficient, socially responsive and sustainable construction industry.*

The objectives of the programme are as follows:
- to enable students to develop the skills required to lead and assist digital developments of the industry;
- to respond to the growing demand for integrated information managers, practitioners, and strategists both in the UK and overseas;
- to establish a benchmark and standard for collaborative working within BIM projects;
- to implement strategic change for inter-disciplinary working amongst professionals from a variety of backgrounds employed within the construction industry;
- to provide students with the contextual knowledge to work with changing legal, regulatory and procedural environment of the construction industry;
- to provide the theory and practice of new information and collaboration approaches to design, construction and facilities management;
- to share exemplar practices;
- to enable students to provide a critical comment on, the range of conflicting interests within a political, social, economic, technological, environmental, legal and international context;
- to engage students in assessing and developing new practices;
- to enable active and autonomous learning to be developed through the use of real problems and case study materials;
- to develop key skills including problem-solving abilities, practical competencies, critical appraisal and communication.

Intended learning outcomes and the means by which they are achieved and demonstrated:

Learning Outcomes

In order to achieve the aims of the course, the learning outcomes are related to each of the following four main areas:

- Knowledge and understanding;

- Intellectual skills;

- Practical skills;

- Transferable skills.

On successful completion of the course the students will be able to:

Knowledge and understanding

1) Identify and define problems in the management of construction projects;

2) Explain and discuss the principles of information management;

3) Explain and discuss the principles of project delivery processes;

4) Articulate theories of collaboration related to organisations, teams and individuals;

5) Place projects in the context of the law, regulation, sustainability, economics and social change.

Intellectual Skills

1) Critically appraise information collected;

2) Debate logically and coherently on issues in the management of construction projects;

3) Differentiate the diverse and multiple perspectives involved in the management of construction projects;

4) Synthesise theory and practice to design / implement practical solutions;

5) Conceptualise new practice through lateral thinking.

Practical Skills

1) Interpret information in the management of construction projects;

2) Specify and demonstrate the application of information technologies used in the design, construction, operation and management of construction projects;

3) Evaluate different options available in the management of construction projects;

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4) Make incisive decisions through an explicit and systematic understanding of the political, social, cultural, economical, technological, environmental, legal and organisational factors in the management of construction projects;

5) Apply research and advanced scholarship skills to inquire into the management of construction projects.

Transferable Skills

1) Manage time and prioritise workloads effectively;

2) Communicate in various forms coherently and comprehensibly to a diverse range of audience;

3) Work professionally and ethically with other people and contribute to team goals;

4) Access and make appropriate use of relevant materials and information;

5) Show confidence, self-awareness and self-reliance through critical reflection.

Learning teaching, and assessment methods used

Knowledge and Understanding

- Face-to-face traditional lecture, seminar, tutorial, self-directed study and peer review sessions.

- Web based tutorials and discussion forums.

- Directed independent learning activities are encouraged at all stages of the course.

- Knowledge and understanding are acquired through rich media based curricula and use of collaborative technologies where appropriate.

- Knowledge and competence assessment is undertaken by tutors and peers. This is both formative and summative and includes seminars, viva-voce, coursework, practical case studies, theory projects, time constrained examinations, and practical assessments.

- Students are supported beyond the traditional face-to-face delivery by appropriate tools and technologies developed to support collaborative working.

Intellectual Skills

- Intellectual skills are developed through teaching and learning programme previously outlined.

- Analytical and problem solving skills are further developed using a range of appropriate 'real' and 'theoretical' case-studies and problem based learning scenarios.

- The formative assessments are to be used to monitor progress and to feed this progress back to the student.

- Assessment can include practical work, individual written coursework, group presentations, individual and group reports, practical assessments, closed and open book time constrained examinations.

Practical Skills

- The acquisition of appropriate and transferable practical skills is central to the learning strategy of the programmes.

- Initiative and independence are fostered throughout, and develop incrementally as the course progresses.

- Emphasis is place on guided, self-directed and student-centred learning, with increasing independence of approach, thought and process.

- Learners are encouraged to plan their own work schedules and are required to meet strict deadlines.

- Learners, who go on to do the MSc element of the course are required to plan and execute a related research project.

- The research methods element provides the vehicle for the development of research and learning skill developments.

Transferable skills

- Transferable/key skills are core to the learning strategy of the programme. They are pervasive, and are incorporated into work units and assessments as appropriate, for example; team-working skills are fostered through the use of group, task-based practical projects.

- The use of information technology plays an integral role throughout the course.

- A full range of resources are identified including books, journals as well as locally created material.

Assessment Methods

A range of assessment methods are employed, assessment criteria being published in each assignment brief. Knowledge and skills are assessed, formatively and summative, by a number of methods, which may include coursework, examinations, presentations, practical assignments, viva's, online forums, podcasts, and project work.

Programme structure and requirements, levels, modules, credits and awards

The structure of the course, the modules, levels and credit values, and the awards which can be gained are shown in the diagram below.

MSc Building Information Modelling and Management

	Modules			
1st Semester (4x15=60 credits)	Construction Law and Contract	Building Information Theory	Digital Design Management	Business Management
2nd Semester (4x15=60 credits)	People and Organisation	Integrated Delivery Processes	Supply Chain Integration	BIM/IPD Strategic Delivery project
Master's (60 credits)	Masters Research Project			

Support for Learning including Personal Development Planning (PDP)

Students are encouraged to identify and, with guidance, to reflect on their own learning needs and are offered the following support as appropriate to meet those needs:

- An induction programme dealing with orientation and the dissemination of essential information including the philosophy of the course;

- An introductory session dealing with writing assignments and referencing;

- A Student Handbook, containing information relating to the University, the Faculty and the School, the course and the modules;

- Access to administrative staff and academic staff, including Programme Director and Head of School, at reasonable times;

- Fully resourced Learning Centre available at City Centre Campus;

- A virtual learning environment to support students remotely via collaborative tools and technologies;

- An introductory session dealing with using web based technologies and how to learn best using these;

- Access to the services of the Faculty librarian;

- Access to Faculty Student Support Tutors;

- Access to the University's Student Services, including those offered by the careers service, financial advisers, medical centre, disability service, crèche, counselling service, chaplaincy and Centre for Enhancement of Learning and Teaching;

- Group tutorials;

- Individual tutorials: face to face, email correspondence and over the telephone;

> - A number of the modules have lectures by practitioners which makes the academic programme more accessible and more useful to practice.

Criteria for admission

Applicants must satisfy the general admissions requirements of the programme.

One of the following is normally required:

- A good UK honours degree at 2:2 or above / equivalent; or

- An equivalent overseas qualification in surveying, construction, civil engineering, real estate or any other construction subjects.

Students who do not possess the above qualifications may, if they have relevant professional experience, be invited to an interview and/or to take a test, at which they will be required to demonstrate the necessary knowledge and understanding for entry onto the course.

Overseas students need to demonstrate a good command of English. University standard for postgraduate education will be required to enrol in this programme.

Methods for evaluation and enhancement of quality and standards including listening and responding to views of students

The following committees and procedures are in place to ensure the maintenance and enhancement of quality and standards, and also to give students a mechanism for effective communication and consultation:

Committees:
- Course team
- Board of Studies
- Examination Board
- Faculty Academic Sub-Committee
- Faculty Learning and Teaching Group
- Faculty Board
- Academic Quality and Support

Mechanisms for review and evaluation:
- Student representatives
- Review and validation events
- Annual Monitoring
- Student feedback questionnaires
- External Examiners' Reports
- Course team meetings and Away Days