Course Specification

MSc Construction Management with BIM (Online)
ECT126
MSc Construction Management with BIM (On Campus)
EECT011

Faculty of Engineering Environment & Computing
School of Energy, Construction & Environment
Academic Year: 2018

Please 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 full advantage of the learning opportunities that are provided.

We regularly review our course content, to make it relevant and current for the benefit of our students. For these reasons, course modules may be updated.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in the Module Information Directory (MID), student module guide(s) and the course handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.
PART A Course Specification (Published Document)

MSc Construction Management with BIM

1. Introduction

1.1 Rationale for Course Design

The requirement for appropriately trained and qualified construction professionals with an understanding of the needs of the modern and future industry is an ever-increasing necessity. Over recent years the focus in the sector has changed from the purely technical to encompass an increasing awareness of the effects of the built environment on the natural environment. The need to produce more buildings, for ever-increasing populations, but with a greater understanding and consideration of the finite nature of the resources available to achieve this.

The Construction Management (CM) with BIM course covers a wide range of skills which industry has identified as critical. In particular the CM course has a very strong focus on Building Information Modelling (BIM) which is covered in two specific BIM modules. According to the Government’s BIM Task Group (2015) “BIM is essentially value-creating collaboration through the entire life cycle of an asset, underpinned by the creation, collation and exchange of shared 3D models and intelligent, structured data attached to them”. The UK Government Construction Strategy (2011) announced the Government’s intention to require collaborative 3D BIM (with all projects and asset information, documentation and data being electronic) on its projects by 2016. Students who successfully complete the CM with BIM course at Coventry will leave with a Building Research Establishment Approved Graduate certification (BRE BIM AG) which will demonstrate to employer’s prior knowledge achieved in the area of BIM. BRE are a leading research establishment within the UK who have been developing certified professional industry courses.

The modern Construction Manager needs to have a knowledge of areas not only of new development, but also conservation and improvement of the existing built environment. This must all be seen against the background of an increasing awareness of the need for responsibility for sustainable development, and the ability to make use of new innovations and technologies in the world of work.

It is therefore essential that in these times of change the graduates from the MSc in Construction Management with BIM at Coventry University are well prepared for the challenges which they will face during their careers.

This course is designed to equip you with the knowledge and skills to enter the world of construction management with confidence in your ability in the areas of technology, legislation, costing and the performance of buildings. Additionally, we will encourage you to develop the innovation and creativity required to tackle the complex problems now facing the industry surrounding space, sustainability, cost and technology not just in the UK but with consideration for the global nature of the industry. The course will enable you to analyse, solve and advise on Construction Management problems of an advanced technical and managerial nature, with sound judgement.
A unique aspect of the MSc Construction Management with BIM course, and therefore an excellent reason to choose Coventry University is our integrated project. The project will utilise ‘real life’ construction scenarios and engage our students in role play representing their developing skillset. Students will develop crucial collaborative skills using several digital construction and communication platforms. Scenario based learning is a critical tool in preparing our students for the challenges of the professional world. This is an integral part of the programme on the MSc Construction Management with BIM courses.

The CM with BIM courses at Coventry will utilise modern teaching and learning techniques such as simulation platforms. Simulation allows us to simulate and replicate ‘real life’ construction scenarios and engage our students in using role play, placing them with a ‘close to real’ learning environment. Campus students will attend the Universities unique simulation centre in person to take part in virtually simulated project scenarios. Online students will engage with an immersive virtual simulation project environment using modern digital communication and collaboration tools such as BIM. Both approaches to simulating project exercises will help to prepare our Construction Management with BIM students for the challenges of the professional world and ease the transition into the workplace.

In adapting the delivery of our current suite of accredited Masters programmes we hope to encourage both new and experienced recruits to the construction industry. The new Master's degree will provide learners with the flexibility to meet both their skills development and their educational requirements whilst either progressing from undergraduate degrees or currently in work. We need to work collaboratively with the Chartered Institute of Building (CIOB) and industry in order to tackle issues of social mobility, principally through access to education, career development and employment opportunities. It is also anticipated that the introduction of these Master’s degrees will address skills shortages of higher level skills in the construction industry.

You will be taught by staff with extensive experience, both academic and professional, in areas such as Construction Management, Architectural Practice, Civil Engineering and the wider construction industry. This breadth and depth of knowledge and experience is vital to ensure that upon graduation you not only understand your role, but the importance of the multi-disciplinary nature of the construction industry as a whole. We also have a strong portfolio of industry-related research, particularly in the areas of low carbon building technology, sustainable construction materials and engineering education, which ensures you will stay abreast of new technologies and emerging issues.

Teaching on the course is highly engaging using modern online support tools. Several activities and assessments are through case studies, so that you can apply your learning to situations you will face in your post university life.

1.2 - Online Element Only

There has been a dramatic shift in how education is delivered in the last decade with far greater opportunities arising to study courses online. Online education will allow each student the opportunity to successfully achieve a quality education, whilst having the flexibility to complete
the process with reduced disruption to their lifestyle in terms of location and commitments. Students will have the opportunity to complete their study without the potential hurdles of commuting or relocation. The construction management with BIM online course will give students the flexibility to plan study around current responsibilities with many elements being student led study.

Course material will be completely accessible online 24 hours a day, allowing students the chance to access material exactly when and where they need it without the disruption of having to locate a library or university building.

Like on campus courses, online students will have continued opportunity to interact and engage with fellow students using digital technologies. Several key elements are in place to ensure that students can not only progress with the content and material in their own time but also engage and interact with peers to further their understanding of the content. Students will have the opportunity to take part in structured online webinars as well as more flexible and informal forum discussions which will be a mix of lecturer and student led. Using a mix of webinar and forum discussion platforms ensures that all types of learners can find positive ways to engage. As a result, less confident communicators may find themselves more confident in communicating via online platforms rather than face to face discussions. The online methods of communicating provide a certain degree of comfort to the student as they can engage with the sessions at a level they feel confident and comfortable with.

The construction management with BIM online course also allows students the opportunity to complete the degree whilst continuing with work or personal commitments. Whilst there will be certain fixed commitment requirements in terms of time and effort to put in the online methods of learning will naturally allow for flexibility to work alongside work and family responsibilities. The online course can also be a valuable tool in ensuring career progression as students can demonstrate to a current employer the willingness to develop further skills without having to cease work completely.

As the construction management with BIM online course will be utilising several modern digital tools students will naturally develop additional technical skills in digital fluency. Students will develop critical computer skills as they progress through the guided learning management systems. Students will become familiar with systems such as online learning platforms, online forums, cloud based file sharing, audio and video conferencing and online team communication and meeting systems.

1.3 - Summary for online and campus courses

In summary, the MSc in Construction Management with BIM at Coventry University will give you the following opportunities and benefits:

- Both modes of delivery, online and campus offer excellent opportunities to develop skills in Construction Management.
- The opportunity to complete your Master’s degree within a taught or flexible online framework.
• The opportunity to develop higher level Construction Management skills whilst in current employment to enable career progression.
• Access to guest speakers and access to live project information through our excellent links with employers like Kier Willmott Dixon and Galliford Try, and manufacturers such as Ibstock Brick
• Opportunity to gain additional professional qualifications as well as your degree - examples include Building Research Establishment Energy Assessment Method (BREEAM) to become an Accredited Graduate (BREEAM AG) and the Building Information Modelling Approved Graduate (BIM AG) qualification. Industry demands for practical and effective skills is extremely high with employer seeking graduates with practical and relevant experience. The BIM AG qualification will demonstrate to employer’s students’ capabilities in BIM through the BRE approved graduate certification.

2 Available Award(s) and Modes of Study

<table>
<thead>
<tr>
<th>Title of Award</th>
<th>Mode of attendance</th>
<th>UCAS Code</th>
<th>FHEQ Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Master of Science (MSc) in Construction Management with BIM (180 credits)</td>
<td>FT 1 year: PT normally 3 years. Maximum 5 years. Online study is normally 2 to 5 years</td>
<td>Not applicable</td>
<td>7</td>
</tr>
<tr>
<td>• Postgraduate Diploma (PgD) Construction Management with BIM (Requires at a minimum the Building Information Modelling Foundation and Building Information Modelling &amp; Sustainability Practice modules plus 90 additional credits)</td>
<td>Campus - On-campus attendance required for course completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Postgraduate Certificate (PgC) Construction Management with BIM (Requires at a minimum the Building Information Modelling Foundation and Building Information Modelling &amp; Sustainability Practice modules plus 30 additional credits)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall back awards</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Postgraduate Diploma (PgD) Unnamed (Any 120 credits)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Postgraduate Certificate (PgC) Unnamed (Any 60 credits)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 Awarding Institution/Body

Coventry University
<table>
<thead>
<tr>
<th><strong>4 Collaboration</strong></th>
<th>Not applicable</th>
</tr>
</thead>
</table>
| **5 Teaching Institution and Location of delivery** | Coventry  
Online - The course will be delivered online using a number of distance learning methods.  
Campus – The course will be delivered on campus with mandatory attendance on campus |
| **6 Internal Approval/ Review Dates** | Date of latest review: (December 2017)  
Date for next review: (2023) |
| **7 Course Accredited by** | |
| **8 Accreditation Date and Duration** | |
| **9 QAA Subject Benchmark Statement(s) and/or other external factors** | MSc Construction Management with BIM:  
- CIOB publishes an educational framework which is required to be referenced in course design and specification, when seeking accreditation. |
| **10 Date of Course Specification** | Dec 2017 |
| **11 Course Director** | Online - Danny McGough  
Campus – Abdussalam Shibani |
12 Outline and Educational Aims of the Course

Educational Aims for MSc Construction Management with BIM

To develop high-level knowledge, wide-ranging understanding and professional skills in:

- provide an educational experience that meets students’ needs and expectations and those of the sectors’ employers;
- provide an up-to-date curriculum that articulates the current challenges and good practice in construction Management;
- provide students with critical skills in Building Information Modelling which will prepare them to enter into a modern digitalized industry;
- provide an in depth understanding of accounting and financial principles and use of financial information to analyse problems and assess performance in the construction industry;
- develop a detailed understanding of theoretical and practical aspects of strategic management in the construction industry and corporate management processes in the construction industry;
- provide an up-to-date curriculum that articulates the current challenges and good practice in the sustainability and economics of the construction sector ensuring students have the ability to demonstrate knowledge and application of environmental principles and legislation applied to the construction industry;
- ensure students’ capacity to evaluate, review and improve approaches and systems and apply learning effectively at an appropriate level using relevant methodologies, ensuring continuous improvement.
- develop personal, technical and management skills that enable highly competent graduates to apply professional knowledge, skills and excellent practice across the world.
- develop abilities in rigorous and valid independent investigation and research.
13 Course Learning Outcomes

On successful completion of the course, a student will be able to:

A student who successfully completes the MSc Construction Management with BIM course will have achieved the following Course Learning Outcomes.

1. Knowledge and application of the main principles of building technology, design and performance. This will include regulatory, procurement, legal, financial, social, technological aspects including Building Information Modelling during the inception, planning, design, construction, use and redundancy phases of the building process.

2. Accept professional and ethical responsibility. Critical evaluation of knowledge and application of ethics and professionalism within the construction management role. Governance and corporate social responsibility in respect to procurement, finance and contractual processes and working practices.

3. Appraise, evaluate and advise on current issues in construction including regulatory, legal, policy, sustainability, innovation and internationalisation.

4. Analyse, solve and advise on Construction Management problems of an advanced technical, Quality assurance and managerial nature, with sound judgement.

5. The ability to identify risks and integrate and ensure a safe working environment and risk management in terms of legislation, health and Safety, management and personal responsibility.

6. Critical analysis of the multi-disciplinary nature of the construction process including collaboration and Building Information Modelling. The roles and responsibilities of the construction professionals and stakeholders, and a respect for the fellow team members in terms of both diversity and cultural values.

7. Select and use a range of appropriate IT platforms for the efficient and appropriate completion of construction related tasks. Analyse, interpret and present information using appropriate information technology processes.

8. Carry out independent in-depth research investigations of a specialised topic, applying appropriate ethical research methodologies. Produce professional reports in accordance with published conventions and/or client expectations.
14 Course Structure and Requirements, Levels, Modules, Credits and Awards

The requirements and curricula for the following awards are defined in this document:

MSc/PgD/PgC Construction Management with BIM

Specific requirements for final and exit awards are detailed with the curricula structures.
The structure of the courses are given in Tables 14.1

Students who have gained 60 credits or more within a Postgraduate Diploma will be eligible for the award of Postgraduate Certificate in that named route.

The courses can be taken on full-time or part time study modes.

Online

Each module consists of several e-learning materials and lessons which should be worked through using self-study. Each module will also be supported by several, structured online webinars as well as more flexible and informal forum discussions which will be a mix of lecturer and student led.

Campus

Each module will consist of taught lectures with support from online material. The Campus course will utilise a staggered delivery pattern where students will need to attend University for 5 full days attendance and 2 tutorial sessions across a 3-week rotation for each module. The 5 full days of attendance will be delivered split across two academic weeks. E.g. 3 days in week 1, 2 days in week 2 and 2 tutorials in week 3. By ensuring the delivery days are spread out across the 3-week module slot students have gaps in between delivery sessions to absorb and assimilate knowledge.

Students will undertake the Integrated Project module. The integrated project will be a platform to demonstrate and develop further previous learnt skills.

All masters’ programmes have been constructed to comply with the University’s taught postgraduate modular framework, based on 180 CATS credits (90 ECTS credits). The taught modules are all specified at M-level and carry either 15 CATS credits (7.5 ECTS credits) or 30 CATS credits (15 ECTS credits) except the Integrated Module which has 10 and 20 credits respectively. Each programme has a 60 CATS credit master’s project incorporating research methods content.

Details of modules included with these programmes are listed in table 14.1 below which includes their credit value. A brief rationale and the market focus for the programme is provided in the introduction to this document.
The programmes have been designed to operate over a flexible one year of full-time study but may be taken over a longer period. Part-time participants normally complete an MSc over two years.

**Academic Personal Tutor**

- Campus access to Academic Personal Tutor

The University will also provide additional support to on-campus students throughout their study through the Academic Personal Tutor program. Each student will be allocated a personal tutor who throughout their study who will be a direct point of contact to support the student through their academic life and study. Students will have timetabled sessions with their APT which will focus on general study support as well as support through the modules.

**Zero credit Modules**

Campus courses will provide additional support and skills to students through the zero-credit module system. Students will have the opportunity to enhance critical construction and research skills with the support of online material and Academic personal tutor tutorials.

For on-line students equivalent additional support will be provided via discussion forums and signposting to academic and research skills materials.

**Awards:**

**MSc Construction Management with BIM**

All the taught modules and the project as listed in the programme of study in table 14.1 (180 CATS credits).

**PgD Construction Management with BIM**

Requires at a minimum the Building Information Modelling Foundation and Building Information Modelling & Sustainability Practice modules plus 90 additional credits passes in taught modules as defined in the programme of study. (without the research project) - 120 CATS credits in total.

**PgC Construction Management with BIM**

Passes in taught modules as defined in the programme of study. Requires at a minimum the Building Information Modelling Foundation and Building Information Modelling & Sustainability Practice modules plus 30 additional credits in taught modules as defined in the programme of study. (without the research project) - 60 CATS credits in total.

**Fall back awards**

- Postgraduate Diploma (PgD) Unnamed (Any 120 credits in taught modules as defined in the programme of study.)
- Postgraduate Certificate (PgC) Unnamed (Any 60 credits in taught modules as defined in the programme of study.)
Table 14.1 - Programme of Study for MSc Construction Management with BIM (Online and Campus)

60 Credits will be take in each semester with the Research Project Module taken in final semester.

<table>
<thead>
<tr>
<th>Module credit level</th>
<th>Module Code</th>
<th>Title</th>
<th>Credit Value</th>
<th>Mandatory/Optional</th>
<th>Course Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>7064EXQ</td>
<td>Project &amp; System Management</td>
<td>15</td>
<td>Mandatory</td>
<td>1,4,5,6</td>
</tr>
<tr>
<td>7</td>
<td>7065EXQ</td>
<td>Organisational Theory and Behaviour</td>
<td>15</td>
<td>Mandatory</td>
<td>1,2,3,4,5,6,8</td>
</tr>
<tr>
<td>7</td>
<td>7066EXQ</td>
<td>Integrated Project – Construction</td>
<td>15</td>
<td>Mandatory</td>
<td>1,2,3,4,5,6,7,8</td>
</tr>
<tr>
<td>7</td>
<td>7067EXQ</td>
<td>Financial and Asset Management</td>
<td>15</td>
<td>Mandatory</td>
<td>1,2,4,5,6</td>
</tr>
<tr>
<td>7</td>
<td>7068EXQ</td>
<td>Building Information Modelling Foundation</td>
<td>15</td>
<td>Mandatory</td>
<td>1,2,3,4,5,6,7,8</td>
</tr>
<tr>
<td>7</td>
<td>7069EXQ</td>
<td>Contemporary Issues &amp; Research in Project Management</td>
<td>15</td>
<td>Mandatory</td>
<td>2,3,4,6,8</td>
</tr>
<tr>
<td>7</td>
<td>7070EXQ</td>
<td>Contract Management Practice and Law</td>
<td>15</td>
<td>Mandatory</td>
<td>1,3,4,5,6,7</td>
</tr>
<tr>
<td>7</td>
<td>7071EXQ</td>
<td>Building Information Modelling &amp; Sustainability Practice</td>
<td>15</td>
<td>Mandatory</td>
<td>1,2,3,4,6,7,8</td>
</tr>
<tr>
<td>7</td>
<td>7999CRB</td>
<td>Dissertation part 1</td>
<td>0</td>
<td>Mandatory</td>
<td>2,4,6,8</td>
</tr>
<tr>
<td>7</td>
<td>7072EXQ</td>
<td>Research Project</td>
<td>60</td>
<td>Mandatory</td>
<td>2,4,6,8</td>
</tr>
<tr>
<td>7</td>
<td>7084EXQ</td>
<td>Supporting Transition to Postgraduate Study</td>
<td>Zero</td>
<td>Mandatory</td>
<td>2,4,6,8</td>
</tr>
<tr>
<td>7</td>
<td>7074EXQ</td>
<td>Preparing to Research</td>
<td>Zero</td>
<td>Mandatory</td>
<td>2,4,6,8</td>
</tr>
</tbody>
</table>

Total 180
15 Criteria for Admission and Selection Procedure

15.1 General criteria for admission to the postgraduate taught programmes

UCAS entry profiles may be found by searching for the relevant course on the UCAS website, then clicking on ‘Entry profile’.

Normally, the entrance requirement is a second classification degree in a relevant discipline. Current requirements are specified on the course page of the university web page.

- Participants whose first language is not English must demonstrate proficiency in verbal and written English language equivalent to IELTS 6.5 or IELTS 6.0 plus a compulsory five week, pre-sessional English course at Coventry University.
- Applications from those not possessing the equivalent of an honours degree will be considered on individual merit and decisions will be based on careful evaluation of the capacity of the applicant to complete the programme successfully.
- The programme is subject to the general University admission procedures and access policies.
- Accreditation for prior learning (APL) is in accordance with University regulations for taught postgraduate courses.

15.2 Admission criteria
Details on admission criteria can be found on the University website. http://www.coventry.ac.uk/

15.3 Course Availability
The course is available through full time and part time online and campus study modes.

15.4 Admission of disabled participants
The University and the Faculty have always adopted a very positive approach to applications from participants with disabilities. Full details on the Universities accessibility provision can be found on the University website. http://www.coventry.ac.uk/
16 Academic Regulations and Regulations of Assessment

This Course conforms to the standard University Regulations.

The Programme Assessment Board (PAB) for the Faculty of Engineering, Environment and Computing is responsible for considering the progress of all students and making awards in accordance with both the university and course-specific regulations. The relevant Subject Assessment Boards (SAB) within the School of Energy, Construction & Environment will be responsible for ratifying and approving the module results.

The pass mark for all modules is 40%. This overall module mark may comprise more than one component (e.g. coursework and exam). The individual module descriptors give the precise pass criteria and the weighting of the component marks that contribute to the overall module mark.

Awards for Master programmes may be made with Distinction or Merit (i.e. achievement of an average mark of at least 70% or 60% respectively).

17 Indicators of Quality Enhancement

The following are key indicators of quality and standards:

- The MSc (Hons) Construction Management with BIM course has been designed in accordance with the QAA benchmark statements for Construction, Property & Surveying and relevant aspects of Construction as appropriate.
- The School has a strong portfolio of industry-related research, particularly in the areas of low carbon building technology and sustainable construction materials, and engineering education.
- All courses in the School are accredited (or are seeking accreditation) from the relevant professional institutions.
- All staff who teach on the course are active in scholarship/research and have a range of professional experience in construction management, construction finance, architectural practice, civil engineering and related built environment professions.
- The School has excellent links with local employers through our Building Advisory Board. These local employers provide input to course management, delivery and development.
- Within the School the record of students gaining employment in the construction industry is excellent, notwithstanding the current economic climate (93% in 2016).

QAA

- The University’s quality procedures were confirmed by a QAA Higher Education Review in 2015.
- There is a diverse and active range of research activities influencing programmes in most areas of the Faculty.
- All of the existing programmes carry external professional recognition;
- Strong and regular industry input to the subject-base. This is achieved in many ways, for example through the long-standing advisory boards, industry-focused collaborative research initiatives and use of guest speakers from industry.
18 Additional Information
Enrolled students have access to additional, key sources of information about the course and student support including:

- Student Handbook
- Course Handbook
- Module Guides
- Course & Module Webs
- Module Information Directory [https://webapp.coventry.ac.uk/MidWebNext/Main.aspx](https://webapp.coventry.ac.uk/MidWebNext/Main.aspx)
- EC Student Portal [https://students.coventry.ac.uk/EC/Pages/Home.aspx](https://students.coventry.ac.uk/EC/Pages/Home.aspx)
- Coventry University Student Portal [https://students.coventry.ac.uk/Pages/index.aspx](https://students.coventry.ac.uk/Pages/index.aspx)