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| CE6212  Contractual Procedures  30 credits | |  |
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CE6212

Contractual Procedures

30 credits

**Programme Specification**

**Title of Course: BSc (Hons) Construction Management**

**Date Specification Produced: August 2017**

**Date Specification Last Revised: July 2018**

This Programme Specification is designed for prospective students, current students, academic staff and potential employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content of each module can be found in the Course Handbook and Module Descriptors.

*Examples of completed programme specifications can be found on the* [*KU Programme Specification Archive*](http://www.kingston.ac.uk/programme-specifications/)**SECTION 1: GENERAL INFORMATION**

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| **Title:** | BSc (Hons) Construction Management |
| **Awarding Institution:** | Kingston University |
| **Teaching Institution:** | Kingston University |
| **Location:** | Penrhyn Road, Kingston |
| **Programme Accredited by:** | To be confirmed |

**SECTION2: THE PROGRAMME**

1. **Programme Introduction**

The course is designed for undergraduate students who wish to study Construction Management to Honours Degree level and aspire to achieve the professional status of Chartered Builder and Incorporated Engineer. The course embraces recent developments in education and industry and the curriculum and teaching benefits from the research interests of the academic staff. The design of the course is based on the guidelines provided by the Engineering Council UK Standard for Professional Engineering Competence (UK-SPEC), the Quality Assurance Agency (QAA) Subject Benchmark Statement for Land, Construction, Real Estate and Surveying, the Joint Board of Moderators (JBM) Guidelines for IEng Accredited Degree Programmes and the Chartered Institute of Building (CIOB) Education Framework to meet the QAA Benchmark statements for Building and Surveying, and the Construction Industry Council’s Memorandum of Understanding and Education Manifesto.

The Module mix and course equips graduates with the knowledge, comprehension, and intellectual ability and subject practical skills to become professional chartered builders, civil engineers or to follow careers in related professional areas. Employability is a key element of the course and hence the emphasis on management, communication, interpersonal and technical skills that enhance employment prospects.

The course aims to cultivate technical and managerial proficiency in Construction Management including the ability to tackle a wide variety of practical problems. The course emphasises the development of a professional attitude to management, design, maintenance, sustainability, quality and safety. This BSc course has retained the development of practical skills and experimentation through the use of laboratories, site visits and field courses. ‘Sustainability’ and ‘Health and Safety’ are threaded through the course modules. Students are supported by a Personal Tutor Scheme (PTS) in which they are allocated a member of staff who, through one-to-one meetings, will assist and encourage students in their academic learning for the duration of their course. The course provides both breadth and depth with an aim to develop the ability to identify, define and solve design and management problems from first principles.

A distinctive feature of the field/course is the integrated curriculum provided at Level 4. The Level 4 modules on this field/course are designed to share learning outcomes with Level 4 modules on other construction and engineering related fields/courses whilst also maintaining certain discrete Construction Management related learning outcomes. This aims to develop in students a solid understanding of other construction and engineering related disciplines and aid in developing a culture of interdisciplinary and collaborative working which are at the top of the construction industry’s agenda.

Employment opportunities are stressed at every level of the course and students are actively encouraged to undertake a work placement between levels 5 and 6; students are supported in finding appropriate placements, i.e. some major employers such as Fluor plc and RG group are regularly invited every year to talk to the 2nd Year Construction Management (CM) students about their placement opportunities. Recent placements in the school include most major construction projects in London: High Speed 1, St Pancras Station, Heathrow Airport (e.g. terminals 5 and 2), Wembley Stadium and the Olympic Park. Placement positions have recently been with small, medium and multi-national Companies such as Fluor PLC, Costain, RG Group and Multiplex. Our graduates are recognised as being thoroughly prepared for employment due to their acquisition of the broader competencies such as communication, group working, time and project management, computer literacy and problem solving skills.

The BSc (Hons) is offered as a three-year full-time degree course or a four-year sandwich course with an industrial placement taken between level 5 and level 6.

1. **Aims of the Programme**

The general aim of the course is:

* To equip graduates with the management, engineering and construction, design, business and personal skills required to become Chartered Builders, Incorporated Engineers and Construction Managers, as well as enabling graduates to follow careers in related professional disciplines and other professional disciplines where clear, logical, numerate and management skills are required, as well as the ability to solve problems and work in teams;

More specific aims of the course are:

* To produce graduates with a breadth and depth of knowledge and a comprehension of the key aspects of Construction Management and Engineering
* To allow graduates to communicate effectively orally and in writing and to use relevant methods and forms to convey engineering and construction ideas and concepts
* To develop graduates with an aptitude for applying technology and management principles to engineering and construction problems
* To prepare graduates with an ability to solve management and design problems and the technical skills needed to realise these solutions
* To equip graduates with the research skills required for postgraduate study and employability skills required for work in the construction industry
* To furnish graduates with a firm grasp of sustainability and ‘Health and Safety’

1. **Programme Learning Outcomes**

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, intellectual skills and subject practical skills as outlined in the following table. The programme learning outcomes are referenced to the QAA subject benchmarks for Land, Construction, Real Estate and Surveying (2016) and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008), and relate to the typical student.

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| **Programme Learning Outcomes** | | | | | |
|  | **Knowledge and Understanding**  **On completion of the course, students will be able to:** |  | **Intellectual skills**  **On completion of the course, students will be able to:** |  | **Subject Practical skills**  **On completion of the course, students will be able to:** |
| A1 | Demonstrate knowledge and understanding of materials, structures and geotechnics recognising various professional roles and the parties involved in all stages of the construction/civil engineering project as well as the interdisciplinary relationships between the functions of construction and the other disciplines of the built environment. | B1 | Apply fundamental theoretical principles that underpin construction management and other disciplines of the built environment, particularly civil engineering. | C1 | Use safely laboratory and workshop equipment for experimental investigation and evaluate data to produce practically valuable results |
| A2 | Demonstrate knowledge and understanding of surveying, traffic and site practice and health and safety, as well as various construction technologies recognising the appropriate software that supports construction and digital construction. | B2 | Use mathematics as a tool for solving construction problems, communicating results, concepts and ideas | C2 | Undertake fieldwork and analyse the data obtained for use in planning and design |
| A3 | Demonstrate knowledge and understanding of the management of construction identifying the key concepts and principles used in construction management including business, legal, cultural and ethical and recognising the regulatory systems including building and planning regulations. | B3 | Think creatively and imaginatively to solve management and design problems. | C3 | Utilise management techniques to control design and construction |
| A4 | Demonstrate an appreciation of principles and processes that deliver an inclusive environment recognising the diversity of user needs including communities and the stakeholders, and the importance of professional ethics. | B4 | Manage projects, people, resources and time taking account of sustainability, legal and statutory requirements, risk, safety, quality and reliability | C4 | Use digital technologies to support interdisciplinary collaborative working in the construction management process. |
| A5 | Demonstrate understanding of mathematics necessary to support application of key theories and principles used in the management of construction, engineering and the other disciplines of the built environment. | B5 | Demonstrate a positive attitude to learning that encourages continuing professional development throughout their careers | C5 | Prepare construction and engineering documentation including producing estimates, cost planning and compiling pricing and tender documents. |
| A6 | Relate all their studies to a knowledge and holistic understanding of sustainability including social, economic and environmental aspects within the context of the built environment. | B6 | Recognise the importance of professional bodies and the professional conduct expected of Construction Managers and Professional Engineers | C6 | Apply procedures relevant to standard contracts and statutory controls |
| **Key Skills** | | | | | |
|  | **Self Awareness Skills** |  | **Communication Skills** |  | **Interpersonal Skills** |
| AK1 | Take responsibility for own learning and plan for and record own personal development | BK1 | Express ideas clearly and unambiguously orally and in writing | CK1 | Work effectively on an individual basis or with others in a group |
| AK2 | Recognise own academic strengths and weaknesses, reflect on performance and respond to feedback | BK2 | Present, challenge and defend ideas and results effectively orally and in writing | CK2 | Work flexibly and respond to change |
| AK3 | Organise effectively, agreeing and setting realistic targets, accessing support and managing time to achieve targets | BK3 | Listen actively and respond appropriately to ideas of others | CK3 | Discuss and debate with others to reach agreement |
| AK4 | Work effectively with limited supervision | BK4 | Prepare reports in prescribed and recommended forms | CK4 | Give, accept and respond to constructive feedback |
|  |  |  |  | CK5 | Show sensitivity and respect for diverse values and beliefs |
|  | **Research and information Literacy Skills** |  | **Numeracy Skills** |  | **Management & Leadership Skills** |
| DK1 | Search for and select relevant sources of information | EK1 | Collect data from primary and secondary sources and use appropriate methods to manipulate and analyse these data | FK1 | Determine the scope of a task or project |
| DK2 | Critically evaluate information and use it appropriately | EK2 | Present and record data in appropriate formats | FK2 | Identify resources needed to undertake the task or project and schedule and manage the resources |
| DK3 | Apply the ethical and legal requirements in the access and use of information | EK3 | Interpret and evaluate data to inform and justify arguments | FK3 | Show the ability to successfully complete and evaluate a task or project, revising the plan where necessary |
| DK4 | Accurately cite and reference information sources using the recommended standard method | EK4 | Be aware of issues of selection, accuracy and uncertainty in the collection and analysis of data | FK4 | Motivate and direct others to enable an effective contribution from all participants |
| DK5 | Use software and ICT as appropriate |  |  | FK5 | Use skills to manage projects and scenarios |
|  |  |  |  | FK6 | Respond to society’s concerns about the impacts of construction and engineering upon the environment |
|  | **Creativity and Problem Solving Skills** |  |  |  |  |
| GK1 | Apply scientific and other knowledge to analyse and evaluate information and data and to find solutions to problems |  |  |  |  |
| GK2 | Work with complex ideas and justify judgements made through effective use of evidence |  |  |  |  |

1. **Entry Requirements**

The minimum entry qualifications for the programme are:

From A levels: 96 points

BTEC: Extended Diploma and Diploma in a related subject

Plus: GCSE (A\*-C) minimum of 5 subjects including English Language and Mathematics

A minimum International English Language Testing System (IELTS) score of 6.0 (min.5.5 in Speaking, Listening, Writing and Reading) or equivalent is required for those for whom English is not their first language.

1. **Programme Structure**

This programme is offered in full-time and sandwich modes, and leads to the award of BSc (Hons) Construction Management. Entry is normally at level 4 with A-level or equivalent qualifications (See section C). Transfer from a similar programme is possible at level 5 with passes in comparable level 4 modules; this is at the discretion of the Course Team. Intake to all modes of study is normally in September.

**i. Professional and Statutory Regulatory Bodies**

**ii. Work-based learning, including sandwich programmes**

All students are encouraged to make use of the opportunity to enhance their learning and personal development by undertaking an industrial placement after the second year of their programme. All placements are reviewed to ensure that they provide a relevant experience in which students can apply their learning in a practical situation. Students have the responsibility for securing an industrial placement; placement are not guaranteed. All students on the course receive support from the placement specialists (Talent Preparation Officers) within the KU Talent team in securing a position and while in the workplace.

This allows students to reflect upon their own personal experience of working in an applied setting, to focus on aspects of this experience that they can clearly relate to theoretical concepts and to evaluate the relationship between theory and practice. Historically many sandwich placements are reasonably well remunerated.

**iii. Outline Programme Structure**

Each level comprises four modules worth 30 credits. Typically a student must complete 120 credits at each level. All students will be provided with the University Regulations and specific additions that are sometimes required for accreditation by outside bodies (e.g. professional or statutory bodies that confer professional accreditation). Full details of each module will be provided in module descriptors and student module guides.

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| **Level 4** (all core) | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **Teaching Block** |
| Engineering Design and Professional Practice | EG4010 | 30 | 4 | 1&2 |
| Structures, and Materials and  Construction Methods | EG4020 | 30 | 4 | 1&2 |
| Applied Mathematics and Computing Applications | EG4030 | 30 | 4 | 1&2 |
| Construction Management and Site Investigation | EG4040 | 30 | 4 | 1&2 |

Note: With the exception of EG4040, all the modules with the EG prefix immediately above are either fully in common or partly in common with other modules in the Level 4 integrated engineering provision in the Faculty of Science Engineering and Computing.

Progression to Level 5 requires 120 credits including passes in all Level 4 modules.

In the Faculty of Science, Engineering and Computing (SEC) a Programme Assessment Board (PAB) will not permit a student to progress to Level 5 with 90 credits at Level 4.

Students exiting the field/course at this point who have successfully completed 120 credits are eligible for the award of Certificate of Higher Education in Construction Management.

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| **Level 5** (all core) | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **Teaching Block** |
| Engineering Project Management | EG5014 | 30 | 5 | 1 & 2 |
| Site and Engineering Surveying | CE5112 | 30 | 5 | 1 & 2 |
| Construction Business and Law | CE5211 | 30 | 5 | 1 & 2 |
| Materials, Design and Procedures | CE5213 | 30 | 5 | 1 & 2 |

Progression to Level 6 requires 240 credits obtained from the field/course including 120 at Level 5.

Students exiting the programme at this point who have successfully completed 120 credits are eligible for the award of Diploma of Higher Education in Construction Management.

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| **Level 6** (all core) | | | | |
| **Compulsory modules** | **Module code** | **Credit**  **Value** | **Level** | **Teaching Block** |
| Building and Environmental Engineering | CE6113 | 30 | 5 | 1 & 2 |
| Site Practice and Management | CE6211 | 30 | 5 | 1 & 2 |
| Contractual Procedures | CE6212 | 30 | 5 | 1 & 2 |
| Individual Project | CE6014 | 30 | 5 | 1 & 2 |

Completion of Level 6 requires passes in all four modules to give 120 credits and qualify for BSc (Hons) Construction Management.

1. **Principles of Teaching Learning and Assessment**

The BSc Construction Management Course has been designed, taking into account the Kingston University Curriculum Design Principles to help develop students into graduates that are professional, thoughtful, creative, resilient, proactive and globally aware independent, equipping them to be lifelong learners.

**Overarching principles**

All students on the programme are working towards a professional career in which they must be able to exercise judgement, communicate with clients and the public and throughout take an ethical approach to all that they do; we also encourage them through the design and execution of the curriculum to be both knowledgeable in terms of how sustainability principles apply to their own field but also develop a responsible attitude towards the role that built environment professionals can play in helping to manage resources in ways which promote environmental sustainability, good governance, respect for people, well-being and the pursuit of economic goals. Sustainability may not be mentioned specifically in many of the titles of modules, or even in the learning outcomes but it underpins all that we teach and the way we encourage students to approach their own learning in a reflective way seeking to find themselves as individuals.

The role of teaching and assessment is to underpin student learning and throughout the programme the strategy is to engage students with a wide range of activities that enable them to develop the knowledge and skills that they will need as practitioners alongside their knowledge base. The student should, as far as practicable, be empowered to take control of their learning but be supported strongly through the process. It follows that as the student progresses through the levels the emphasis will be from lecturer-led to student-led work though lectures will feature at all levels of the programme. In delivering on this principle, much of the teaching related to knowledge and understanding will be focused on simulated real life study and projects in which students will be led through the materials and required to develop their skills through the tasks set. Field trips and site visits are therefore key components of the strategy and support sessions aimed at skills development are an important part of the delivery strategy.

**Teaching & Learning**

A solid and comprehensive technical and professional knowledge base is non-negotiable and is delivered through lectures and seminars provided in a collaborative working environment which aims to facilitate lecturer/learner and learner-to-learner interaction across disciplines. Lectures are used to impart key information and will normally be followed up by tutorials and workshops which provide opportunities for problem-based learning (PBL), project-based learning (PjBL), flipped classrooms and game learning via a range of in-class activities including for instance scenario analysis, role-play and simulations.

Module guides set out clear expectations for guided independent learning. Students will be directed to reading and Technology Enhanced Learning (TEL) packages to prepare for individual topics or sessions and also to problem sets or exercises to consolidate and test their learning afterwards. This will be introduced at level 4.The Virtual Learning Environment (VLE) at Kingston will support learning throughout the course through a variety of TEL objects such videos, screencasts, on-line MCQs, discussion boards and interactive teaching packages. It will also deliver teaching material such as lecture notes/presentations, problems sets and worked examples. In the case of **EG4020 Structures, Materials and Construction Methods;** and **CE5213 Materials, Design and Procedures** the use of online videos reinforces the students learning and helps them to understand how construction elements are put together. This helps support an inclusive approach as students can access learning material at their convenience and work through it at their own pace with the opportunity to pause and rewind as they wish. Teaching may be augmented by on-line discussion boards to aid understanding. We recognise that an ability to be comfortable with a range of digital media is important to employability skills and effective learning. Students also need to be computer literate and able to operate industry standard computer packages.

Developing skills is also critical to successful vocational education. These skills are practical – such as the ability to design and draw building details and layouts both free hand and with the use of IT programmes such as computer aided design software. Students will also have skills in Excel and will have developing skills in project management software programmes and in Building Information Modelling (BIM); they will also learn to access research databases efficiently. They will develop professional skills, such as how to write and present reports on strategic advice and programmes of building works of maintenance and alteration and intellectual skills, such as resolving problems such as construction contract disputes and to debate some of the ethical and policy issues that they may face in their subsequent professional lives. The learning and assessment philosophy also places emphasis on personal skills development, through extensive use of group-based activities which develop team working skills and respect for colleagues and reflective diaries which are critical dimensions of professional practice.

**Integrated first year and interdisciplinary collaboration**

All Construction Management, Building Surveying, and Quantity Surveying undergraduate students at Kingston University take a common set of four (30 credit) modules at Level 4. Also one of those four modules is in common with engineering students. This allows all students to experience various disciplines before deciding on an area of specialisation. The opportunity to study and work with students from different disciplines is a distinct feature of the course at Kingston and is extended into the second year when all students take a common level 5 module. In **EG4010 Engineering Design and Professional Practice** students will be introduced to the principles and importance of group work. Project-based learning (PjBL) is employed requiring interdisciplinary teams to design, build and present solutions to small scale engineering challenges; the outputs of these will be part of the summative assessment. Interdisciplinary group work will be further developed at level 5 in **EG5014 Engineering Project Management** where students are taught about group project management in TB1 and then will spend much of TB2 working on a more complex challenge that will comprise 60% of the module assessment. In this module students are likely to tackle a live, real-world problem supplied by a well know company or organisation. This will give the students an opportunity to talk about how they have worked with an external company on an engineering problem as part of a team, when they apply for an industrial placement.

**Focus on active learning and enhancing student engagement**

A feature of the learning, teaching and assessment strategy in the School of Engineering is that many instructional lectures have been replaced by collaborative, problem solving or enquiry-based learning workshops and tutorials. These require students to prepare for, and participate in, the classroom activities, rather than passively listening to the lecturer. Students are expected to engage with the guided learning to prepare for these teaching sessions and consolidate their learning after the session. These interactive sessions also provide students with opportunities for peer learning, group work and presentation practice. Give some module examples where this occurs In these sessions the lecturer facilitates learning by supporting students in creating their own knowledge and understanding. Lecturers may also introduce and summarise key concepts with short mini-lectures. Project based Learning (PBjL) is introduced in **EG4010 Engineering Design and Professional Practice** and developed further in **EG5014 Engineering Project Management** and **CE6211 Site Practice and Management**. These collaborative activities encourage students to draw on their own set of experiences and cultural backgrounds when tackling real world challenges. The Flipped classroom approach is introduced in EG4010. Where the curriculum (lecture content) of a small topic is delivered via on-line materials (screencasts, videos or study packs) and then developed and applied in workshops (4 hours). At level 5 **CE5213 Materials Design and Procedures** has a more substantial Flipped classroom approach where ¼ or ½ of the curriculum is taught by this method.

Active and collaborative learning is also incorporated in traditional lectures which may have question-and-answer sessions, brief student discussions, clicker activities integrated into the lecture. These methods ensure that valuable contact time is focussed on the application and critical analysis of knowledge and the development of key skills such as problem solving, communication, and group-work.

The high percentage use of active learning sessions in the teaching hours is aimed at improving student engagement, creativity, confidence and self-reliance. The course endeavours to further secure student engagement by making students feel part of a community and increasing their sense of belonging which is supports to improved retention and progression. This is achieved by providing opportunities to interact with staff and students both socially and academically. In addition, to the active learning sessions and group work, this is achieved through: the PT scheme, field work, industrial visits, extra-curricular seminars, research internships, course representative system, student ambassador work, peer mentoring, civic engagement and outreach opportunities.

**Practice and research-informed teaching**

Embedded in our teaching and learning practice are two major shifts in pedagogy, specifically, our teaching is both practice and research informed. In addition to academic staff, the teaching of specialist topics is delivered by experienced practitioners including recent graduates. The involvement of practitioners in our teaching delivers a range of benefits to the student experience. Practitioners are able to share their professional experience and bring a wealth of knowledge in relation to current and emerging issues within the respective discipline and industry-led practice. Practitioners also serve as inspiring role models for students preparing to enter practice.

Our approach to research-informed teaching is largely based on the concept of research-based teaching where emphasis is on research methodologies, processes and problems, learning in a research or inquiry-learning environment. This is in particular strongly presented in **EG4040 Construction Management and Site Investigation**, **CE5213 Materials Design and Procedures** and **CE6211 Site Practice and Management** where students are active learners, constructing knowledge in a research environment with the guidance of academics as well as construction practitioners from the Industry. With this approach, students learn about research processes or learn in project oriented problems by developing research skills such as ability to critical analyse and reflect, ability to organise and plan, ability to gather & analyse data. **CE6014 Individual Project** also follows this model. This places students at the heart of constructing new knowledge. It seeks to transform students from passive recipients of information to active self-motivated independent learners and researchers who are enabled to challenge existing knowledge bases and partake in the creation and dissemination of new knowledge that furthers and advances scholarship and professional practice within their discipline. There are varied manifestations of research-based teaching in the course taking several forms of experiential learning achieved through in-class problem-based learning, field work and laboratory work. These create opportunities for students to investigate and critique theory and its application and share their reflective findings with other staff and students. Research-informed teaching is also achieved through the concept of research-led teaching where research undertaken by academic staff teaching on the course, which in turn informs the design of learning activities as well as collaborative research projects involving staff and students which often result in publishable research outputs.

**Development of employability skills**

The progressive development of a range key employability skills is another feature of the course as exemplified in teamwork/groupwork discussed above. Regarding communication skills, at level 4 the focus is on writing individual practical reports (**EG4040 Construction Management and Site Investigation**) using a standard format and style, and encouraging students to orally communicate the outcomes of small group exercises in the active learning teaching sessions in **EG4010 and EG4030 Structures, Materials and Construction Methods.** At level 5 students will be required to produce a substantial written group report and present their individual findings in **CE5213 Materials Design and Procedures**. To help development of these skills student will be required to submit a draft of a report for **EG4010** to the Support for Academic Success Centre for feedback and to discuss this with their personal tutor. At level 6 in the Individual Project module **CE6014** will be taught how to synthesise and critical review information from a variety of sources and report this and their research results in a formal research report and an oral presentation.

To complement the development of employability skills within the curriculum, Personal tutors will encourage students to engage in a range of extra-curricular activities such as student representation, part-time work, sports and recreation,  society membership,  volunteering ; student ambassadorship, leadership and mentoring; cultural and creative activities;   academic and professional collaboration; placement activity; enterprise activity; KU Talent events and opportunities. Activity in these areas is recognised by the university’s Kingston Award Scheme. KU Talent offers a range of events, including Careers Uncovered fairs, which include employers coming to campus to promote internship, placement and graduate opportunities, Spotlight on engineering networking activities where employers and alumni are invited on campus to talk about career pathways

**Hands-on Practical work**

Hands on practical experience in laboratories is a fundamental in developing practical skills as well as enhancing data collection and analysis skills. Students will have the opportunity to work in laboratories in some of their modules. Practical work is closely related to the taught content to provide context for the theoretical work. For Construction Managers specifically an understanding of how materials fail enhances their understanding of defects which they observe during condition surveys. At level 4 students are introduced to basic measurement and manufacturing processes and how to apply these in a laboratory and testing environment in **EG4010 Engineering Design and Professional Practice** and in **EG4040 Construction Management and Site Investigation.** At level 5 the focus is on measurement of a variety of parameters in **CE5213 Materials Design and Procedures** the focus is on structural testing and manufacture of materials which are then tested to failure. This is delivered through supervised practical sessions with experiment protocols. At level 6 students and expected to select and apply requisite practical skills in their own independent research work in **CE6014** the individual project module.

**Assessment for Learning**

The assessment strategy has been designed help students to learn and prepare them for employment, rather than just a tool to measure their learning. The assessment is designed to be authentic, inclusive and transparent. The assessment tasks focus on the real world-engineering activities that enhance students’ employability. This is particularly the case for **CE5213 Materials Design and Procedures and CE6211 Site Practice and Management** which both require students to interact with a problem or concept. The major group assignment in **CE6211** which acts as a capstone project and encompasses all the skills the students have acquired during their degree programme. All modules have explicit formative assessments to provide opportunities for practice and the chance to use ‘feed forward’ to help students improve their work in subsequent summative assessments. Reports at Level 4 and the feedback given will help the students write their Group Report in **CE5213**. This report in turn will give the students feedback which they then can apply to their more comprehensive Group Report in **CE6211**. Examinations are still used as they are an effective way of assessing basic knowledge and understanding, and professional bodies expect to see examination covering key curriculum content. However, the strategy recognises that other assessment methods are better suited to assessing higher level problem solving skills. This is reflected in the decreasing use of examination from level 4&5 to level 6&7. The use of a well-balanced range of assessment methods is key part to of our inclusive assessment strategy. Group and teamwork assessment is instrumental in developing and recognising this important employability skill.

Assessment is both formative (i.e. the work is marked and feedback given but the mark does not count towards the module achievement mark) and summative (the assessed mark counts towards the module grade awarded). Formative assessment is important as it encourages students and supports their overall learning. Examples of formative work include:

* Draft submissions of coursework for comment;
* On-line discussion groups monitored by staff;
* In-class quizzes to test recently covered lecture material;
* Formal ‘client meetings’ in which notes are made and feedback given; and
* The preparation of portfolios based on weekly seminar work, where only the final portfolio is assessed summatively.

Summative feedback takes a wide range of forms, some of which have been outlined under the teaching and learning section above and all of which are detailed in the module descriptors. A special feature of the course is the small number of formal examinations which are included (normally only one per level). Whilst we hold that examinations do have a role to play in testing knowledge and critical reasoning, there are other methods which have possibly greater applicability to the work that graduates will subsequently undertake. Therefore as far as possible, emphasis is placed on developing simulated and real world experiences. Students undertake traditional academic tasks such as writing reports and essays but a range of academic skills is also tested in more innovative ways in various modules including for instance the simulated projects undertaken in the context of fieldwork and the production of short videos to showcase the students’ work.

As the programme is focused on developing employability skills, the ability to present orally, to produce well-presented and appropriately structured professional reports, and to sketch and produce scheme designs using IT are also assessed. Professionals working in the real estate environment also need to communicate effectively with people from a wide range of backgrounds, all the time demonstrating an ability to sustain an argument, whilst having due consideration for those with whom they are dealing. Therefore oral negotiation, advocacy and debate are all used as assessment methods and the School has developed specific experience in these methods. Each module is designed to test up to six learning outcomes; therefore in each module a range of assessment is undertaken with up to three formal summative points, spread throughout the year better to ensure an even workload for the student. Normally the last assessment task will be synoptic in nature in that it will test all or most learning outcomes, thereby assuring the assessment boards that each student has fulfilled the learning objectives before progressing to the next stage of study. Feedback to students on summative assessment is vitally important. This is delivered through a number of means such as formal written individual feedback which contains pointers for future improvement; class collective feedback; issuing of model answers. The method used will vary depending on the task that was undertaken but staff realise the need for it to be timely and supportive.

**Inclusive Teaching Practice**

Staff Student Consultative Committees and Boards of Study provide opportunities for student to make suggestion on how to develop a more inclusive curriculum by taking into account the specific circumstances of the student body. The variety of teaching activities also takes account of the student’s different learning preferences and experiences and there is a careful balance of individual and group based activities.

Marking criteria are provided for all assessments as part of the assessment booklet at the beginning of the year for each module and care is taken to ensure that the language used is clear. Assessment and marking criteria for all substantial assessments are discussed in class so all students have an opportunity to interrogate the criteria.

In the programme as a whole, the following components are used in the assessment of the various modules:

* Practical exercises: to assess students’ understanding and technical competence
* Individual and group-based case project work: to assess ability to understand requirements, to provide solutions to realistic problems and to interact and work effectively with others as a contributing member of a team. The outcomes can be:
* Written reports, where the ability to communicate the relevant concepts, methods, results and conclusions effectively will be assessed.
* Oral presentations, where the ability to summarise accurately and communicate clearly the key points from the work in a brief presentation will be assessed.
* Video, which may replicate features of oral presentations but allows advance preparation away from the audience (which may suit some students better).
* Multiple choice or short answer questions: to assess competence in basic techniques and understanding of concepts.
* Long answer structured questions in coursework assignments: to assess ability to apply learned techniques to solve simple to medium problems and which may include a limited investigative component
* Long answer structured questions in end-of-module examinations: to assess overall breadth of knowledge and technical competence to provide concise and accurate solutions within restricted time
* Project: The individual project module represents an opportunity for students to draw together different aspects of their learning on the course and to apply the techniques learned in an extended study. As such the assessment here will place a greater emphasis on ability to plan work, manage time effectively, and research background information, culminating in a written report and interview.
* Individual and group practical laboratory reports

1. **Support for Students and their Learning**

Student support recognises that the student experience is unique to each student. A key part of our approach to an inclusive curriculum is that we acknowledge and where possible accommodate their individual circumstances. The personal tutor scheme is central to the efforts to provide a personalised learning experience (See PT section of programme specification). At level 4 and 5 a core set of problems for each module are issued to students. These cover the whole curriculum for a particular level. Students are required to work through these formative assessment problems as they cover the relevant curriculum. This allows students to test their learning and measure their progress. Discussion of progress on these problem sets will be a key part of the personal tutor scheme. Students are required to upload their progress on these activities onto the **Learning Log** created on the University VLE system. The Learning Log will be available to the relevant personal tutors for further discussion during one-to-one meetings. There will be milestones for students to meet at every level, and it will be one of the personal tutor’s roles to monitor the students’ progress and give appropriate advice*.* Where difficulties are encountered PTs will be able to help or direct students to available support including peer mentoring schemes, PAL, Maths aid and on-line resources etc.

Students are supported by:

* **A Module Leader** for each module
* **A Course Leader** to help students understand their programme structure and provide academic support
* **A Personal Tutor** (PT) to foster a close and engaged academic relationship with students and advise and refer students to other University services
* There is a **Student Support and Engagement Team** to help students with any problem that is affecting their studies.
* A dedicated Undergraduate Course Administrator
* **An induction programme** and study skills sessions at the start of each academic year
* **SEC Academic Success Centre (SASC)** is a one-to-one drop-in Study Skills session for students every weekday. Help is available on a range of academic skills from writing reports, note-taking, to exam revision, referencing, programming and mathematical skills.
* **VLE** – a versatile on-line interactive intranet and learning environment accessible both on-site and remotely
* **Course Representative scheme**
* **Talent A University Careers** and Employability Service
* Comprehensive University support systems including the provision of advice on finance, regulations, legal matters, accommodation, international student support, disability and equality support.
* The Students’ Union
* An Academic Team that seeks to maintain an open door policy in the spirit of supporting students.

**Personal Tutor Scheme (PTS) in the School of Engineering**

The following provides the aims and structure of the Personal Tutor Scheme (PTS) for the School of Engineering. It is intended that the PTS is embedded within the modular provision of the BSc Course.

**Aims**

* To build a rapport between staff and students and contribute to personalising students’ experience within the School of Engineering
* To support students in the development of their academic skills providing appropriate advice and guidance to students throughout their time at Kingston, while monitoring their progress, helping to identify individual needs and referring students to other University services as appropriate
* To help students to develop the ability to be self-reliant and confident self-reflective learners who use feedback to their best advantage
* To encourage students to reflect on how their learning relates to a wider context and their personal career progression

**Allocation of Personal Tutors**

* Personal tutors will be allocated during induction week
* Tutors will be allocated on a course basis where appropriate with student numbers being equally divided amongst the staff within the school
* Students will keep the same tutor throughout their course of study

**Assessment**

The PTS is embedded in core curriculum modules at each level of undergraduate study:

Level 4 – EG4010 Engineering Design and Professional Practice

Level 5 – EG5014 Project Engineering and Management

Level 6 – CE6014 Individual Project

There are specific aims and outcomes for each level that will be assessed, as the PTS is a progressive and cumulative scheme building on the skills developed in previous levels. Formative assessment will be provided in the form of regular feedback during meetings when the student will be able to put forward draft assignments for evaluation. The summative assessment will comprise 3 credits at each level.

**Level 4: Settling in and building confidence**

**Aims and Learning Outcomes**

* To assist students in making the transition to Higher Education and to generate a sense of belonging to the School of Engineering with an emphasis on widening participation issues
* To help students to develop good academic habits and to gain the confidence to operate successfully in a university context
* To prepare students to make the most of feedback throughout their course

**Contact:**

* Teaching block 1: three one-to-one meetings during induction week, weeks 2 and 7
* Teaching block 2: two one-to-one meetings during week 1 and week 7
* End of academic year individual ‘wrap up’ email

In addition to a core set of problems for each module students are also given a list of engagement activities that they are encouraged to take advantage of at level 4. PT will discuss progress on problem sets and engagement with certain activities with tutees throughout the year.The Learning Log will be available to the relevant personal tutors for further discussion during one-to-one meetings. There will be milestones for students to meet at every level, and personal tutor’s will monitor the students’ progress and give appropriate advice.

The module **EG4010 Engineering Design and Professional** Practice is closely linked to the Personal tutor scheme as it introduces key academic and employability skills. In addition it focuses on reflective practice on feedback and their progress with academic and employability skills. It is expected that these are topics of conversation personal tutor meetings.

**Embedded Module: EG4010 Engineering Design and Professional Practice**

|  |  |
| --- | --- |
| **Learning Outcome:** | **Assessment** |
| To assist students in making the transition to Higher Education and to generate a sense of belonging to the School of Engineering | Formative (one to one meetings) |
| To help students’ to develop good academic habits and to gain the confidence to operate successfully in a university context | Formative and Summative  (one-to-one meetings, plus three concise exercises covering email etiquette, report writing and graphic analysis) |
| To prepare students to make the most of feedback throughout their course | Formative (one-to-one meetings) |

**Level 5: Stepping it up and broadening horizons**

**Aims and Learning Outcomes**

* To help students comprehend and plan for the academic demands of level 5 and to support increasing independence
* To encourage students to look forward, to take up opportunities to develop wider skills and to take responsibility for their personal development
* To foster students’ ability to build on and respond proactively to the feedback they have received
* To assist students in reflecting on the skills that they are developing and consider how they relate to employability

**Contact:**

* Regular one-to-one meetings from week 1
* Email contact at the end of teaching block 1
* Individual ‘wrap up’ email at end of academic year

Throughout the year, students are expected to reflect on their acquisition of skills and preparation for and industrial placement and employment with their personal tutors. This activity is integrated into **EG5014** and constitutes 10% of the module assessment.

**Embedded Module: EG5014 Engineering Project Management**

|  |  |
| --- | --- |
| **Learning Outcome:** | **Assessment** |
| To help students comprehend and plan for the academic demands of level 5 and to support increasing independence | Formative (one-to-one meetings) |
| To encourage students to look forward, to take up opportunities to develop wider skills and to take responsibility for their personal development | Formative and Summative  (one-to-one meetings and preparation of a dissertation proposal for level 6) |
| To foster students’ ability to build on, and respond proactively to the feedback they have received | Formative (one-to-one meetings) |
| To assist students in reflecting on the skills that they are developing and consider how they relate to employability | Formative and Summative  (one-to-one meetings and preparation of a Curriculum Vitae) |

**Level 6: Maximising success and moving on**

**Aims and Learning Outcomes**

* To support students with the planning necessary to maximise success in their final undergraduate year
* To encourage students to reflect on the employability skills they have developed and be proactive in moving towards a professional life and/or further study
* To help students to make best use of the feedback they have received so that they can build on their strengths and take steps to address any weaknesses

**Contact:**

* Regular one-to-one meetings from week 1
* Email contact at the end of teaching block 1
* Individual ‘wrap up’ email at end of academic year

Personal Tutors would have access to all the formative and summative assessment results of their tutees and would be responsible to discuss them with their tutees and assist them to prepare plans for further improvements and advise on any academic issues they may have. The personal tutors are also responsible for giving a bigger and more complete picture of learning, teaching, learning outcome and assessment and their linkage to the tutees.

**Embedded Module: CE6014 Individual Project**

|  |  |
| --- | --- |
| **Outcome:** | **Assessment** |
| To support students with the planning necessary to maximise success in their final undergraduate year | Formative (one to one meetings) |
| To encourage students to reflect on the employability skills they have developed and be proactive in moving towards a professional life and/or further study | Formative and Summative  (one to one meetings, along with the preparation and oral presentation of their Individual Project) |
| To help students to make best use of the feedback they have received so that they can build on their strengths and take steps to address any weaknesses | Formative (one to one meetings) |

1. **Ensuring and Enhancing the Quality of the Course**

The University has several methods for evaluating and improving the quality and standards of its provision. These include:

* External Examiners
* Boards of Study with student representation
* Annual review and development
* Periodic review undertaken at the subject level
* Student evaluation
* Moderation policies

The School interfaces with several professional bodies (JBM and CIOB) and for these annual monitoring and periodic reviews provide other opportunities for reflection and external contribution to course design and quality assurance and enhancement.

Employer liaison groups which take varying forms also provide the opportunity for external input to the quality assurance and enhancements of the School’s programmes.

1. **Employability Statement**

This curriculum embeds the development of employability skills throughout the course and is designed to equip students with the ability to relate the knowledge and skills that they have learnt to real world contexts in which they may work in the future.

Initially students are guided towards learning about employability skills and career pathways, but as they move through the course they are expected to become more independent and take ownership of their career development by engaging with classes provided by KU Talent, including; Professional Communication, Time and Self-Management and Identifying and Articulating Skills. There are also opportunities to perfect skills required to gain employment such as; CV writing, Psychometric Test and Using LinkedIn. A student’s development and career options are discussed in personal tutor meetings and guidance given as appropriate. This is in liaison with the KU Talent team, the University’s Careers Service.

The student’s development of career management skills is supported by an Industrial Liaison Officer (ILO) who liaises with KU Talent as and when necessary. The KU Talent supports students in preparation of CVs and letters of application. Furthermore, the Ku Talent arranges career fairs from leading employers (two or three times a year) who talk to students about work in the construction industry and skills required. With these visitors, students have the opportunity to have mock and/or real interviews as well collect information that helps them in career decision making.

The School strongly encourages and supports all students in applying for positions in industry for an Industrial Placement year between level 5 and level 6: the school emphasises the benefits to be obtained from an approved placement in industry. The School has a longstanding and active Industrial Advisory Board (IAB) which meets twice per year. The IAB is comprised of senior executives from leading client, contracting and consulting organisations. It provides useful input in the design/redesign of courses and units, which ensures that the course continues to meet the expectations of the construction industry. Furthermore, all academic staff are professionally engaged with many and varied links with the construction industry and professional bodies. The School has therefore extensive contacts in the construction industry and this usually improves students’ chances of getting a placement.

An Industrial Placement comprises a period of at least 36 weeks with an approved employer. University staff develop and promote relationships with industry and provide assistance to students in the process of finding a placement. Students have a support network that includes assistance during the process from preparation of their curriculum vitae through applications and the interview/assessment to agreeing their contract. Students are required to produce quarterly reports on their placement and are supported throughout the period by their personal tutor, who will visit them at their place of work on at least one occasion. The tutor will discuss progress with the student and employer and will recommend any improvements to the learning opportunities. Students fulfilling the requirements for an Industrial Placement will be awarded a Sandwich Degree on the completion of level 6.

This course has been designed to fully meet the exemplifying academic benchmark requirements, for registration as a Chartered Builder (CIOB) and/or an Incorporated Engineer (IEng) and (with further learning) for Chartered Engineer (CEng) status. Most graduates will aspire to careers in the construction industry and to becoming Chartered Builders and/or Incorporated Engineers. Graduates develop careers in all branches of the construction industry, in the UK and throughout the world; as contractors and consulting engineers, and within local authorities, water authorities, government organisations, businesses and the defence industry. Where students take an industrial placement they are able to secure employment with the placement organisation following graduation. The academic and key skills developed throughout a construction/engineering course allow graduates to follow careers in other professions such as ICT, finance, teaching and construction professionals. In addition, a number of graduates will progress to MSc courses in construction-related specialist areas before continuing their career in industry or research.

1. **Approved Variants from the Undergraduate Regulations**

None

1. **Other sources of information that you may wish to consult**

Subject benchmark

<http://www.qaa.ac.uk/assuring-standards-and-quality/the-quality-code/subject-benchmark-statements/honours-degree-subjects>

School Website:

[www.sec.kingston.ac.uk/about-SEC/schools/civil-engineering](http://www.sec.kingston.ac.uk/about-SEC/schools/civil-engineering)

**Development of Programme Learning Outcomes in Modules**

This table maps where the programme learning outcomes are assessed across the twelve BSc modules. It provides an aid to academic staff in understanding how individual modules contribute to the programme aims, a means to help students monitor their own learning and personal and professional development as the programme progresses, as well as a checklist for quality assurance purposes.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Level 4** | | | | **Level 5** | | | | **Level 6** | | | |
|  | **Module Code** |  | EG4010 | EG4020 | EG4030 | EG4040 | CE5211 | CE5112 | CE5213 | EG5014 | CE6211 | CE6212 | CE6113 | CE6014 |
| **Programme Learning Outcomes** | **Knowledge & Understanding** | A1 |  | SF |  | SF | SF |  | SF |  | SF |  | F | SF |
| A2 | SF | SF |  | SF |  | SF | SF |  | SF |  | SF | SF |
| A3 |  | SF | SF | SF | SF | F | SF | SF | SF | SF | SF | SF |
| A4 |  |  |  | F | SF |  |  | SF | SF | SF | SF | F |
| A5 |  | SF | SF |  | SF | SF |  | SF | SF |  | SF | F |
| A6 | S | SF |  | SF | SF |  | SF | SF | SF |  | SF | SF |
| **Intellectual Skills** | B1 | SF | F |  |  | SF | SF | SF | SF | SF |  | SF | F |
| B2 |  | SF | F | SF |  | SF |  | F | SF | F | F | F |
| B3 |  |  |  |  |  | F | SF | SF | SF | SF | SF | SF |
| B4 | SF |  | SF |  | SF | F |  | SF | SF | SF |  | F |
| B5 | S | SF | F | SF | F |  | F | F | SF | SF | SF | F |
| B6 | F |  | SF | F | F | SF | F | F | SF | SF | F | F |
| **Practical Skills** | C1 |  |  |  | F |  | SF | F |  |  |  | F | F |
| C2 |  |  |  |  |  | SF | F |  | SF |  |  | F |
| C3 |  |  | F | F |  | SF | F |  |  |  | F | F |
| C4 | S |  | F | F | SF | SF | SF | SF | SF | SF | SF | SF |
| C5 | SF |  |  |  | SF | SF | SF |  | SF | F |  |  |
| C6 |  |  |  |  | SF | SF |  |  | SF | SF |  |  |

**S**  indicates where a summative assessment occurs.

**F** where formative assessment/feedback occurs.

**Students will be provided with formative assessment opportunities throughout the course to practise and develop their proficiency in the range of assessment methods utilised.**

**Technical Annex**

|  |  |
| --- | --- |
| **Final Award(s):** | BSc (Hons) Construction Management |
| **Intermediate Award(s):** | Cert HE in Construction Management  Dip HE in Construction Management  BSc Construction Management |
| **Minimum period of registration:** | FT = 3 years Sandwich = 4 years PT = 5 years |
| **Maximum period of registration:** | FT = 6 years Sandwich = 8 years PT = 10 years |
| **FHEQ Level for the Final Award:** | Level 6 |
| **QAA Subject Benchmark:** | Land, Construction, Real Estate and Surveying |
| **Modes of Delivery:** | Full-time, Part-time and Sandwich |
| **Language of Delivery:** | English |
| **Faculty:** | Science, Engineering and Computing |
| **School:** | Engineering |
| **Department:** | Construction and Surveying |
| **JACS code:** | K251/2 |
| **UCAS Code:** | K251/252 (full-time, sandwich) |
| **Course/Route Code:** | UFBCM1BCM01 (full-time)  USBCM1BCM01 (sandwich) |
|  |  |
|  |  |

**Level 6**

**Level 4**

**Level 5**

CE6211

Site Practice and Management

30 credits

CE5211

Construction Business and Law

30 credits

**Industrial Placement**

EG4010

Engineering Design and Professional Practice

30 credits

CE6212

Contractual Procedures

30 credits

CE5112

Site and Engineering Surveying

30 credits

EG4020

Structures, Materials and Construction Methods

30 credits

CE6113

Building and Environmental Engineering

30 credits

CE5213

Materials, Design and Procedures

30 credits

EG4030

Applied Mathematics and Computing Applications

30 credits

CE6014

Individual Project

30 credits

EG5014

Engineering Project Management

30 credits

EG4040

Construction Management and Site Investigation

30 credits

**Field Diagram BSc (Hons) Construction Management – Full-time and Sandwich Route**

CE6212

Contractual Procedures

30 credits