REGULATIONS FOR THE DEGREE OF
MASTER OF SCIENCE IN DIGITAL MANAGEMENT OF BUILT ASSETS (MSc[DMBA])

These regulations are applicable to students admitted in the 2023-24 academic year and thereafter.

(See also General Regulations and the Regulations for Taught Postgraduate Curricula)

Any publication based on work approved for a higher degree should contain a reference to the effect that the work was submitted to the University of Hong Kong for the award of the degree.

Admission Requirements

DMBA1

To be eligible for admission to the curriculum leading to the Master of Science in Digital Management of Built Assets, candidates

- (a)   shall comply with the General Regulations and the Regulations for Taught Postgraduate Curricula;
- (b)   shall hold a Bachelor's degree of this University or from a comparable institution accepted for this purpose;
- (c)   for a candidate who is seeking admission on the basis of a qualification from a university or comparable institution outside Hong Kong of which the language of teaching and/or examination is not English, shall satisfy the University English language requirement applicable to higher degrees as prescribed under General Regulation G2(b); and
- (e)   shall satisfy the examiners in a qualifying examination if required.

Qualifying Examination

DMBA2

- (a)   A qualifying examination may be set to test candidates' formal academic ability or their ability to follow the course of study prescribed. Such an examination shall consist of one or more written papers or their equivalent and may include a project report.
- (b)   Candidates who are required to satisfy the examiners in a qualifying examination shall not be permitted to register until they have satisfied the examiners in the examination.

Advanced Standing

DMBA3

Candidates may be given advanced standing for up to 2 courses or 12 credits on the ground that equivalent courses or subjects have been passed at another university or comparable institution accepted by the faculty for this purpose, provided that no candidates shall be eligible for the award of the degree set out in these regulations without having completed at least 60 credits in this curriculum.

Award of Degree

DMBA4

To be eligible for the award of the Master of Science in Digital Management of Built Assets, candidates

    (a)   shall comply with the General Regulations and the Regulations for Taught Postgraduate Curricula; and

    (b)   shall complete the curriculum and satisfy the examiners in accordance with the regulations set out below.

Period of Study

DMBA5

The curriculum shall normally extend over one academic year of full-time study or two academic years of part-time study. Candidates shall not be permitted to extend their studies beyond the maximum period of registration of two academic years of full-time study or three academic years of part-time study, unless otherwise permitted or required by the Board of the Faculty.

Completion of the Curriculum

DMBA6

To complete the curriculum, candidates

    (a)   shall satisfy the requirements prescribed in TPG 6 of the Regulations for Taught Postgraduate Curricula;

    (b)   shall follow course of instruction and complete satisfactorily all prescribed written work and practical work where appropriate;

    (c)   shall satisfy the examiners in all prescribed courses in any prescribed form of assessment; and

    (d)   shall satisfy the examiners in attendance at workshops and other learning activities in the manner specified in these regulations and syllabuses in completing 72 credits of prescribed courses and elective courses.

Capstone Project

DMBA7

Candidates are to complete a Capstone experience that covers the whole of the curriculum and allows candidates to show that they have achieved all of the learning objectives.

Grading Systems

DMBA8

Individual courses shall be graded according to one of the following grading systems as determined by the Board of Examiners:

(a) Letter grades, their standards and the grade points for assessment as follows:

Grade	Standard	Grade Point
A+		4.3
A	Excellent	4.0
A-		3.7
B+		3.3
B	Good	3.0
B-		2.7
C+		2.3
C	Satisfactory	2.0
C-		1.7
D+	Pass	1.3
D		1.0
F	Fail	0

and

(b) "Distinction", "Pass" or "Fail".

Courses which are graded according to (b) above will not be included in the calculation of the GPA.

Assessment

DMBA9

(a) Candidates shall be recommended for discontinuation of studies under the provisions of General Regulation G12 if they have:
    (i)   failed to satisfy the examiners in three courses or more in any semester; or
    (ii)   failed to satisfy the examiners of any one course at the third attempt; or
    (iii)   failed to complete the curriculum by the end of the maximum period of registration; or
    (iv)   exceeded the maximum period of registration specified in the regulations of the curriculum.

(b) Candidates who have failed to satisfy the examiners in fewer than three courses in any semester may be permitted to make up for the failed course(s) in the following manner as determined by the Board of Examiners:

    (i) repeating the failed course by undergoing instruction and satisfying the assessments; or
    (ii) presenting themselves for re-assessment in the failed course; or
    (iii) for elective courses, taking another course in lieu and satisfying the assessment requirements.

(c) Candidates shall not be permitted to repeat a course for which they have received a passing grade for the purpose of upgrading.

(d) There shall be no appeal against the results of examinations and all other forms of assessment.

Assessment Results

DMBA10

On successful completion of the curriculum, candidates who have shown exceptional merit may be awarded a mark of distinction, and this mark shall be recorded in the candidates' degree diploma.

SYLLABUSES FOR THE DEGREE OF
MASTER OF SCIENCE IN DIGITAL MANAGEMENT OF BUILT ASSETS (MSc[DMBA])

These syllabuses are applicable to students admitted in the 2023-24 academic year and thereafter.

(See also General Regulations and the Regulations for Taught Postgraduate Curricula)

Candidates entering the Master of Science in Digital Management of Built Assets [MSc(DMBA)] curriculum are required to complete 60 credits of core courses and to select two elective courses (6 credits each) from MSc(DMBA) or other MSc programmes subject to approval by the Programme Director.

CORE COURSES

RECO7601.   Innovation and Processes (6 credits)
RECO7615.   International Construction Procurement (6 credits)
RECO7603.   Management Theory and Collaborative Project Management (6 credits)
RECO7616.   BIM Execution Planning (6 credits)
RECO7605.   Information Management (6 credits)
RECO7609.   Technologies and Innovation (6 credits)
RECO7610.   Virtual Facilities Management (6 credits)
RECO7617.   Capstone: Understanding Digital Management of Built Assets (6 credits)
RECO7613.   Information Technology in Design and Construction (6 credits)
RECO7618.   Built Assets of the Metaverse: Gaming and VDC (6 credits)

ELECTIVE COURSES

RECO7607.   Understanding Industry Practice (6 credits)
RECO7608.   Future Industry Directions (6 credits)
Elective courses from other designated MSc programmes offered by the Department of Real Estate and Construction will be announced by the Programme Director at the beginning of the year.

Mode of Assessment

All courses will be assessed by examinations and/or continuous coursework assessment, unless otherwise specified. Assessment methods and criteria will be specified for each course in the course description and be approved by the course director in consultation with teachers delivering the course.

RECO7601.   Innovation and Processes (6 credits)

This course covers innovation management and the concepts of business process engineering and reengineering for built assets. It introduces the principles of business models, business processes analysis and design, workflow management, techniques and supporting tools, innovation and innovation management, technology management and product development, informative management. Case studies of innovations and the innovation process are explored and the impact of these on business models and business processes is explored.

Assessment: 50% coursework and 50% examination

RECO7615.   International Construction Procurement (6 credits)

This course examines the strategic and emergent issues in built assets procurement: a definition of procurement systems; organising the project procurement process; culture; conventionally orientated to developmentally orientated procurement systems, for example, Early contractor involvement (ECI); Integrated project delivery (IPD); virtual design and construction (VDC); DfMA; MiC and modular construction; use of digital technologies and procurement process implications; multiple performance criteria for evaluating construction contractors; applying relational contracting in the supply chain; selection criteria; the impact of culture on project performance.

Assessment: 65% coursework and 35% examination

RECO7603.   Management Theory and Collaborative Project Management (6 credits)

This course examines fundamental knowledge and innovations in digital management theory and its application in Built Assets: the project organisation, company organisation, management theory and schools of thought, the project life cycle, organisation structure, team roles, change management.

Assessment: 100% coursework

RECO7616.   BIM Execution Planning (6 credits)

This course overviews the process of developing project specific BIM Execution Plans (BEP) to support interdisciplinary information sharing and integrated design. The subjects include an overview of BIM uses to support project objectives, development of process models to plan model development and handoffs, documenting and measuring modelling competencies, planning the needed IT infrastructure for project needs.

Assessment: 100% coursework

RECO7605.   Information Management (6 credits)

This course examines fundamental knowledge in information management and its application to the project management in construction. This includes an introduction to information management, information management theories, through-life information management, common information management tools and techniques (e.g. the use of Common Data Environment – CDE), and digital information management (based on ISO 19650) and its effect on collaboration, coordination and integration, commercial and contractual aspects of construction (e.g. Employer Information Requirements (EIR)).

Assessment: 60% coursework and 40% examination

RECO7607.   Understanding Industry Practice (6 credits)

This introductory course introduces the industry practice to the students. Students reviews the performance of the industry, the pain points and its effect on the industry. Key areas include productivity, safety, digital management of built assets, technology adoption and other emergent issues. Through group discussion and presentation, students are expected to learn in a collaborative way and to get a deeper understanding to the industry practice. Special focus in GBA is one of the key elements of this course.

Assessment: 100% coursework

RECO7608.   Future Industry Directions (6 credits)

This course is designed to enable the student to develop and evaluate advanced technologies with a Tech Hunt exercise (e.g. ConTech, GreenTech, PropTech) on managing built assets digitally at HKSTP and also some incubation centre around GBA. Student will then examine the specific emergent issue and to conduct research in company industry or in a global context with a view to presenting a case for change, review or further research within the company or domain. The project can take the form of action research, secondment to another company or department or in-house workshops and seminars. The outcome of the research will be a report that presents a range of plans and options to resolve the issues identified in the first case study.

Assessment: 100% coursework

Pre-requisite: RECO7607. Understanding Industry Practice

RECO7609.   Technologies and Innovation (6 credits)

This course is designed for students to explore the application of emerging digital technologies to promote innovation and improved integrated project delivery within the construction industry. Through hands-on demonstrations of leading and latest digital technology applications, students will develop a direct appreciation for innovative digital technology applications. Guided case studies will build confidence in how individuals can access, evaluate and promote innovative technologies within their construction organisations.

Assessment: 100% coursework

RECO7610.   Virtual Facilities Management (6 credits)

The construction of a facility generally amounts to less than 20% of the whole-life costs of operating and maintaining the facility. Yet, the operational phase is under-emphasised in early design decision-making. This can lead to reduced functionality and poor operational performance in use. The involvement of facility owners and operators in this decision-making is crucial if facilities are to be safe, efficient and cost-effective, as well as sustainable well into the future. This course examines the key concept of "design, manufacture and construction for operability" based on rigorous briefing and performance evaluation to ensure that the required functionality and operational performance of the facility is achieved in operation and use. It includes consideration of the impact of BIM, smart systems, AI, automation and robotics on IPD, as part of a digital way of working. The relevance of Big Data to day-to-day facilities management, associated FM and BIM standards, building performance evaluation and the Soft Landings Framework are discussed.

Assessment: 50% coursework and 50% examination

RECO7617.   Capstone: Understanding Digital Management of Built Assets (6 credits)

This Capstone allows students to experience working in a team by way of a real-life case study. The case is provided and moderated by local professionals based upon their own experiences. Students form teams and play the various roles determined in the project case study. Participants get the chance to employ the principles and practices that have been taught throughout the programme. Outcomes are exhibited in terms of relational behaviour, project execution planning, appropriate technology adoption, stakeholder engagement and other performance indicators presented during the programme.

Assessment: 100% coursework

Pre-requisite: RECO7605. Information Management; RECO7610. Virtual Facilities Management; and

RECO7613.   Information Technology in Design and Construction (6 credits)

The course will provide an understanding of a range of novel information technology (IT) approaches in design, construction, and operational contexts. The course will include the concepts, theories, methodology, and comparative studies of IT innovations in construction from the early planning stage to the operational facility management stage. Both established IT solutions and emerging digital technologies will be introduced, while the evaluation and acceptance of new IT solutions and processes are emphasised. The course will incorporate hands-on practices and case studies to demonstrate and analyse the digital technologies for current construction processes as well as long term innovation purposes.

Assessment: 100% coursework

Pre-requisite: RECO7609. Technologies and Innovation

RECO7618.   Built Assets of the Metaverse: Gaming and VDC (6 credits)

Students will be introduced to serious gaming technologies in use in different sectors and understand their effect on built assests and virtual design and construction (VDC). A few gaming technologies used by construction industrywill then be introduced to the students in lecture. Students will also be provided hands-on experience in these tools enabled by gaming technology. They will be invited to appraise and assess the effectiveness of gaming that could be potentially employed to improve the construction industry.

Assessment: 100% coursework

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