



Bachelor of Science in Construction Project Management with Honours

Academic Staff (Construction Project Management)



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2.0 School Requirements (Academic)

The requirements for students to at the School of HBP are summarised as follows:

(2) Core Courses

These courses are mandatory for all students and they have to obtain a pass. These courses contain the fundamental topics of the School's curriculum and are coded 'T'.

(B) Elective Courses

Elective courses are alternative courses offered by the School. Students who have chosen to major in one of the programmes, are required to take certain related electives that are classified as priority. When this requirement is satisfied, the student may register for any other electives of their own choice. Code to be used is 'E'.

© Practical Training Course

B.Sc. (Honours) (Construction Project Management) students are required to undergo Practical Training for a period of 6 months in their fourth year. Practical training carries 12 units.

2.1 Unit Requirements

Unit requirement for graduation is as follows:-

Bachelor of Science (Honours) (Construction Project Management) (4 years)

B.Sc. (Hons) (CPM) Programme	Units
Core Courses	72
Elective Courses	36
University Courses	21
Total	129

2.2 Course Duration

Bachelor of Science (Honours) (Construction Project Management) (4 years)

B.Sc. (Honours) (CPM)	
Period	B.Sc. (Honours) (CPM)
Minimum semesters	8 sem (4 years)
Maximum semesters	14 sem (7 years)

For Core and Elective Courses:

Grade F (Fail) will be required to repeat the course.

Grade D- and above is considered as a passing grade (Pass)

For Studio Courses under the Core Courses:

Grade of C and above is considered as a passing grade. Students obtaining grade C- and below will be required to repeat the course.

Repeat Courses:

Students awarded with a grade 'C-' and below for a particular course may be given a chance to improve their grades by repeating the course during the KSCP or normal semester. Students awarded with a grade 'C' and above for a particular course will not be allowed to repeat the course whether during KSCP or normal semester.

2.3 Studio Courses

Studio courses are **mandatory** for all students to pass, i.e. with achievements of Grade C and above. Students obtaining Grade C- and below will be required to repeat the course.

For Architecture Studio Courses, the passing grade is B-. Architecture students obtaining C+ and below need to repeat and pass the course before they can proceed with the upper studio.

CONSTRUCTION MANAGEMENT (30 Units)

Code	Title
RMS101/5	Fundamentals of Construction Project Management Studio
RMS102/5	Construction Project Management Competency Studio
RMS 203/5	Pre-Construction Studio
RMS 204/5	Construction Studio
RMS 305/5	Facilities Operations and Maintenance Management Studio
RMS 306/5	Contemporary Issues in Construction Project Management Studio

3.0 List of Courses

A. Core Courses (72 Units)

Code and Title			Unit	Semester	Year	TICK ✓
RMS 101	-	Fundamentals of Construction Project Management Studio	5	1	1	
RMK 155	-	Fundamentals of Construction Law	3	1	1	
RMK 156	-	Health, Safety and Environmental Management	3	1	1	
RMK 153	-	Principles of Construction Economics	3	1	1	
RAG 161	-	Building Construction I	3	1	1	
RMS 102	-	Construction Project Management Competency Studio	5	2	1	
RMK 252	-	Principles of Project Management	3	2	1	
RMG 131	-	Digital Practices in Construction	3	2	1	
RMK 233	-	Measurement of Building Works	3	2	1	
RMS 203	-	Pre-Construction Studio	5	1	2	
RMK 262	-	Fundamentals of Construction Business and Accounting	3	1	2	
RMS 204	-	Construction Studio	5	2	2	
RMS 305	-	Facilities Operations and Maintenance Management Studio	5	1	3	
RMS 306	-	Contemporary Issues in Construction Project Management Studio	5	2	3	
RUL 474	-	Compulsory Practical Training	12	1	4	
RML 470	-	Construction Project Management Research Project	6	2	4	

B. Elective Courses (36 Units)

Code and Title		Project Dev.	Construction	Operation & Maintenance	Unit	Sem	Yr
REG 261	Building Services	*	*	*	3	2	1
RMK 234	Building Cost Estimation and Pricing	*	*	*	3	1	2
RMK 363	Construction Economics	*	*	*	3	1	2
RAG 132	Introduction to Built Environment and Human Settlement	*			3	1	2
REG 132	Structural Mechanic		*	*	3	1	2
RMK 255	Law and Practice of Construction Project Management 1	*	*	*	3	2	2
RMK 264	Construction and Financial Management		*	*	3	2	2
RAG 265	Building Construction 2		*	*	3	2	2
REG 233	Geomatic Technology	*	*		3	1	3
REG 265	Infrastructure Technology	*	*		3	1	3
RAK 345	Housing Studies	*			3	2	3
RMK 336	Valuation	*		*	3	1	3
RMK 353	Property Management	*		*	3	2	2
RQG 355	Management, Sustainability and Internationalisation	*	*	*	3	2	4
REG 361	Methods of Construction	*	*	*	3	1	3
REG 360	Industrialised Building System (IBS)	*	*		3	2	3
REG 468	Road and Transportation		*	*	3	1	3
RMK 358	Advance Practices in Construction Project*		*		3	2	3
RMK 357	Land Administration	*			3	2	2
RMK 455	Law and Practice of Construction Project Management 2	*	*	*	3	2	4
RBG 351	Building Maintenance			*	3	1	3

4.0 Course Synopsis

RUL 474 – Compulsory Practical Training

This course emphasizes on compulsory practical training to students on matter related to practicing professional in related fields.

Learning Outcomes

At the end of the course students will be able to:

- (i) Complete tasks assigned by a firm or organization in a professional manner
- (ii) Display the ability to solve problems based on industrial requirements
- (iii) Solve relevant design issues via teamwork

RMS 101 – Fundamentals of Construction Project Management Studio

This course emphasizes on construction project life cycle and overall physical development processes. It entails development processes and the major players or stakeholders, concept of development appraisal and feasibility including evaluation of land suitable for development, property market, development cost, infrastructural needs, engineering and building services.

Learning outcomes:

At the end of the course, students will be able to:

- (i) Describe the life cycle of construction projects and the processes of physical development.
- (ii) Describes in detail the concept of physical development and evaluation of alternative solutions.
- (iii) Identify appropriate methods for physical development and the appropriateness of ideas towards the preparation of planning to coincide with the needs of the project.
- (iv) Reporting the findings in groups suitable physical development of the proposed location.

RMS 102 – Construction Project Management Competency Studio

This course emphasizes the practice of project management competencies that are applied in the development of physical projects. Three main areas of knowledge in construction project management competencies are highlighted, namely technical, general management and psycho-social knowledge areas. In the area of technical knowledge, the concepts of scope management, contractual and legal administration, as well as management of resources in managing projects/physical development are introduced to the students. Within the knowledge area of general management, concepts based on risk management, quality management and productivity are introduced and discussed. Finally, concepts such as stewardship, group and teamwork, as well as ethics and professionalism within the context of psycho-social knowledge areas will be applied via the teaching and learning activities of the course. The deliverables of the physco-social context are achieved through the implementation of project management competency practices learned by students in contributing towards society via execution of programs involving the Bottom Billion strata of society. These Bottom Billion associated programs will be a meaningful experience for the students in managing actual construction projects that may be more complex in the future without neglecting the needs and demands of marginalized groups within society.

Learning outcomes:

At the end of the course, students will be able to:

- (i) Identify the basic competencies and the professional management of construction projects needed in the management of physical development. Explain the basic requirements of construction project management from technical perspective, general management and psycho-social aspect.
- (ii) Implement appropriate physical development and meet the requirements, carried out in groups.

RMK 153 – Principles of Construction Economics

This course emphasizes on market structure, supply and demand in marketing building industry. It introduces the economic concepts; main economic problems; demand, supply and market equilibrium; economic structure; cost and production are also being discussed.

Learning Outcomes:

At the end of the course students will be able to:

- (i) Demonstrate the ability to relate economic principles to the construction industry market
- (ii) Reproduce economic development models based on current situations
- (iii) Study the problems within the construction industry based on the volatility of the economy system.
- (iv) Report the findings on the relationship between economy and the construction industry.

RMK 156 – Health, Safety and Environmental Management

This course encompasses the identification and control of hazards and management supervision of health, safety and environment in workplace, with an emphasis on the construction industry.

Learning outcomes:

At the end of the course, students will be able to:

- (i) Explain the basic concepts of management of health, safety and the environment within organization.
- (ii) Explain relevant acts applicable in health, safety and the environmental management.
- (iii) Identify risks at construction sites and methods of controlling the risks.

RMS 203 – Pre-Construction Studio

This course is an extension to the construction project management competency studio. The students are introduced to construction estimating techniques, the principles of cost estimating and cost administration. The costing techniques have two approaches: the first, emphasises on the preparation of measurement of quantities as practically executed by any quantity surveyor and the second, where students would assume the role of a construction contractor as they need to competitively price the previously prepared tender documents. This course is tailored to encourage both individual and group work ethics.

Learning Outcomes

At the end of the course students will be able to:

- (i) Explain the main content and additions involved in the tender document
- (ii) Produce measurement and bill of quantities for construction work of a building
- (iii) Prepare a tender document appropriate to the project
- (iv) Generate cost estimates using quantity bills in tender documents in groups.

RMS 204 – Construction Studio

This course is designed for students to apply their knowledge in various aspects of construction project management based on real life case studies from the industry. This covers the legal aspects, tender processes, site management, and the application of construction management software.

Learning Outcomes

At the end of the course students will be able to:

- (i) Explore the concepts and techniques of managing construction projects
- (ii) Carry out project bids and evaluate tenders in groups
- (iii) Explain construction law in managing projects and sites and implement ethical values and professionalism
- (iv) Demonstrate skills in using appropriate software in project management

RMK 233 – Measurement of Building Works

This course establishes quantity measurement techniques for building and civil engineering works based on the Standards Method of Measurement 2 (SMM2).

Learning Outcomes

At the end of the course students will be able to:

- (i) Explain the principles and methods for measuring building-based building quantities
- (ii) Clearly distinguish the work areas for each building element
- (iii) Perform quantitative measurements on the construction work of a building using Standard Measurement Method 2 (SMM2).

RMK 252 – Principles of Project Management

This course discusses on managing the construction industry encompassing the methods of basic planning, monitoring and controlling use in project management.

Learning Outcomes

At the end of the course students will be able to:

- (i) Differentiate the various basic concepts within the aspects of management and organization
- (ii) Manipulate the organizational objectives and structure as well as to identify the organizational environment
- (iii) Explain the psycho-social aspects of management and organization
- (iv) Demonstrate the methods of project management

RMK 255 – Law and Practice of Construction Project Management 1

This course discusses the construction law in Malaysia, the relationship between the parties in construction industry from legal perspective and the application of standard form of contracts.

Learning Outcomes

At the end of the course students will be able to:

- (i) Identify legal concepts related to the Construction Industry
- (ii) Describes the application of the legal aspects of uniform construction contracts used in Malaysia
- (iii) Shows the legal relationship between the parties involved in the construction project
- (iv) Describe the ethical practice of law relevant to the construction industry.

RMS 305 – Facilities Operations and Maintenance Management Studio

This studio course instils into students in-depth knowledge on the project delivery phase right through to the operations and management of assets, including the use and maintenance of facilities in a systematic and strategic manner.

Learning Outcomes

At the end of the course students will be able to:

- (i) Describes procedures and actions at the stage of project closure and submission.
- (ii) Demonstrates cost estimation methods, procedures and project scheduling in the deployment phase.
- (iii) Describes management processes and procedures at the operational and maintenance levels.
- (iv) To study the level of operational and maintenance management practices practiced by various building teams in a team setting.

RMS 306 – Contemporary Issues in Construction Project Management Studio

This course is designed for students to apply their prior knowledge acquired on the construction industry. It demands the students to be pragmatic, of critical thinking and has scientific skills. The students need to communicate with various parties involved in the construction industry using their

social skills, teamwork, their values, work ethics so as to meet the high level of professionalism. Students also need to demonstrate their information management skills, leadership and entrepreneurship. The ultimate focus is on lifelong learning.

Learning Outcomes

At the end of the course students will be able to:

- (i) Implement the practical concepts and techniques of actual construction projects
- (ii) Demonstrate an appropriate methodology and determine its appropriateness in managing actual construction projects
- (iii) Organise the results of practical project management research studies
- (iv) Resolve and report on project issues in groups

RMK 336 – Valuation

This course introduces the students to the basic concept of valuation which covers the concept of value, the economic basis of property valuation, valuation and investment principles and factors affecting property value. Emphasis is given on the five valuation methods and their application to the main types of property and also valuation for legal purposes.

Learning Outcomes

At the end of the course students will be able to:

- (i) Distinguish and explain the factors that influence property value based on the different types of properties
- (ii) Explain the principles and fundamentals related to the field of valuation
- (iii) Demonstrate and explain the use of financial mathematical formulas involved in calculating property values based on specific valuation methods
- (iv) Identify and use the appropriate valuation methods according to the different types and purposes of property valuation

RMK 353 – Property Management

This course introduces a diverse range of topics in the property management profession. These include the functions of property management, property market and legislations that influence the profession. Operational aspects like the elements of leasing; acquisition and disposal of property; record keeping and office organisation including the occupant's liabilities and real estate marketing techniques are also introduced. Besides that, the maintenance section offers an impact study of design on future building maintenance, the principle and techniques of its administration and management; maintenance budget; methods of systematic maintenance; maintenance process relating to the various building elements; and innovation in building maintenance management.

Learning Outcomes

At the end of the course students will be able to:

- (i) Distinguish the aspects of the property market as well as the components of property management.
- (ii) Study and solve problems relating to the property market and management
- (iii) Explain and elaborate on the findings of property market and management studies
- (iv) Explain the conditions related to property market and management as well as to suggest methods of improvement according to the current needs of the construction scenario

RMG 131 – Digital Practices in Construction

This course helps students to develop an understanding of information and communication technology (ICT), digital modelling, and digital practice in the development projects. It focuses on exploring the use of applications of digital technologies including Building Information Modelling (BIM), virtual reality, building simulation and project document management system. With this course, the student will attain basic knowledge and skills using softwares used by construction project managers and practitioners in the construction industry.

Learning Outcomes:

At the end of the course, students will be able to:

- (i) Explain the theories, concepts and functions of various types of information and digital technologies in construction project management
- (ii) Identify the techniques and methods of using various software in managing construction projects
- (iii) Develop workflow planning, coordination and communication of project project management work activities using appropriate planning

RML 470 – Construction Project Management Research Project

This course puts in place the entire research process which include, preparing research proposals, literature review, conceptual and theoretical frameworks, quantitative and qualitative research methods as well as data analysis techniques to the students. Therefore, the students are required to work individually in order to produce a dissertation which will be continuously supervised and subsequently evaluated in a viva voce.

Learning Outcomes

At the end of the course students will be able to:

- (i) Synthesis of reading literature review for form the basis of research and framework conceptual or theory.
- (ii) Identify critical issues for review and recommendation
- (iii) Practice communication smoothly and professionally with respondents to get the data they need to analyze
- (iv) Adhere to research ethics at every stage of the process investigation
- (v) Perform literature search, collection and analysis data by optimizing the use of technology
- (vi) Demonstrate ability to manage time, resources and data in completing research projects.

RMK 363 – Construction Economics

This course encompasses cost estimation, control and management in the design and construction process.

Learning Outcomes

At the end of the course students will be able to:

- (i) Point out the importance of the construction industry as well as its related processes
- (ii) Organize the theories and principles practised by all professionals within the construction industry in relation to construction economics
- (iii) Study and compare between the different techniques practised in construction economics)
- (iv) Demonstrate the aspects of construction project economic viability/feasibility

RMK 262 – Fundamentals of Construction Business and Accounting

This course introduces to students the process and applications of construction business and accounting fundamentals in the construction industry.

There are two main sections:

- 1) to study the issues relating to business ownership, goals of the firm, procurement and tender system; and
- 2) to establish the elements of accounting systems and financial statements as well as the available banking facilities in the market

Learning Outcomes

At the end of the course students will be able to:

- (i) Explain the concept of building management and its related processes
- (ii) Differentiate the type of ownership of the company, its purpose and function in the construction industry
- (iii) Produce financial reports including balance sheets

5.0 University Requirements

Construction Project Management Program requires 21 units of University Courses for graduation. In order to graduate, the minimum passing grade required is Grade C.

UNIVERSITY COURSE REQUIREMENTS		CREDIT TOTAL	
		Local Students	International Students
General Studies (MPU)			
U1	<u>Local Students</u> HFF225 (Philosophy and Current Issues) (2 credits) HFE224 (Appreciation of Ethics and Civilisations) (2 credits) LKM400 (Bahasa Malaysia IV) (2 credits) <u>International Students of Science and Technology</u> HFF225 (Philosophy and Current Issues) (2 credits) LKM100 (Bahasa Malaysia I) (2 credits)	6	4
U2 (Local Students) AND U3 (International Students)	<u>Local Students</u> WUS101 (Core Entrepreneurship) (2 credits) English Language Courses (4 credits) <u>International Students</u> SEA205E (Malaysian Studies) (4 credits) English Language Courses (4 credits)	6	8
U4	<u>Local Students</u> WAR122 (Integrity and Anti-Corruption Course)/Co-Curricular Courses*	2	2
	<u>International Students</u> Co-Curricular Courses*		
Options	Students can/have to choose any of the following: Co-curricular courses Skill courses/Foreign Language Courses/Other courses offered by other schools	7	7

COURSE STRUCTURE

UNDERGRADUATE PROGRAMME CONSTRUCTION PROJECT MANAGEMENT

YEAR 1

SEMESTER 1				SEMESTER 2					
RMS 101/5	Fundamentals of Construction Project Management Studio	T	5	RMS 102/5	Construction Project Management Competency Studio	T	5		
RMK 155/3	Fundamentals of Construction Law	T	3	RMK 252/3	Principles of Project Management	T	3		
RMK 156/3	Health, Safety and Environmental Management	T	3	RMG 131/3	Digital Practices in Construction	T	3		
RMK 153/3	Principles of Construction Economics	T	3	RMK 233/3	Measurement of Building Works	T	3		
RAG 161/3	Building Construction I	T	3	REG 261/3	Building Services	E	3		
	University Course	U	2	WUS101/2	Core Entrepreneurship (University Course)	U	2		
UNITS				19	UNITS				19

YEAR 2

SEMESTER 3				SEMESTER 4					
RMS 203/5	Pre-Construction Studio	T	5	RMS 204/5	Construction Studio	T	5		
RMK 262/3	Fundamentals of Construction Business and Accounting	T	3	RMK 255/3	Law and Practice of Construction Project Management 1	E	3		
RMK 234/3	Building Cost Estimation and Pricing	E	3	RMK 264/3	Construction and Financial Management	E	3		
RMK 363/3	Construction Economics	E	3	RMK 353/3	Property Management	E	3		
RAG 132/3	Introduction to Built Environment and Human Settlement	E	3	RAG 265/3	Building Construction 2	E	3		
REG 132/3	Structural Mechanic	E	3	RMK 357/3	Land Administration	E	3		
(Choose only TWO (2) elective subjects)				(Choose only THREE (3) elective subjects)					
	University Courses	U	3		University Courses	U	4		
UNITS				17	UNITS				18

YEAR 3

SEMESTER 5				SEMESTER 6					
RMS 305/5	Operation and Maintenance Studio	T	5	RMS 306/5	Contemporary Issues in Construction Project Management Studio	T	5		
RMK 336/3	Valuation	E	3	RMK 358/3	Advance Practices in Construction Project	E	3		
REG 233/3	Geomatic Technology	E	3	RAK 345/3	Housing Studies	E	3		
REG 265/3	Infrastructure Technology	E	3	REG 360/3	Industrialised Building System (IBS)	E	3		
RBG 351/3	Building Maintenance	E	3	(Choose only TWO (2) elective subjects)					
REG 361/3	Methods of Construction	E	3						
REG 468/3	Road and Transportation	E	3						
(Choose only THREE (3) elective subjects)									
University Courses			U	4	University Courses			U	6
UNITS			18	UNITS			17		

YEAR 4

SEMESTER 7			
RUL 474/12	Compulsory Practical Training	T	12
UNITS			12

SEMESTER 8			
RML 470/6	Construction Project Management Research Project	T	6
RMK 455/3	Law and Practice of Construction Project Management 2	E	3
RQG 355/3	Management, Sustainability and Internationalisation	E	3
(Choose only ONE (1) elective subject)			
UNITS			9
	Core Courses	T	72
	Elective Courses	E	36
	University Courses	U	21
TOTAL UNITS			129