POSTGRADUATE HANDBOOK
SESSION 2018/2019
SELAMAT DATANG to the Faculty of Built Environment, University of Malaya.
Welcome to the world’s Top 100 Architecture and Built Environment Faculty ranked by the QS World University Rankings by Subject since 2015.

The latest QS World University Rankings showed that University of Malaya has improved its world ranking from 114 in 2018 to 87 in 2019. With this improvement, UM is now within the top 1% percent of World’s Universities.

In this Faculty we combine top teaching and learning facilities, state-of-the-art technology and stimulating academic programmes to produce highly sought-after graduates in the fields of Architecture, Building Surveying, Quantity Surveying, Real Estate and Urban and Regional Planning.

The Faculty offers a comprehensive range of bachelor's and master's degree programmes that is distinctive within Malaysia and the South East Asia Region. All programmes are accredited by the Malaysian Qualifying Agency (MQA). Our programmes bring theory to practice through rigorous curricula led by experts in their fields, providing opportunities for students to excel academically and professionally. Together, the broad range of programmes
provides unique research, teaching and learning opportunities tailored to postgraduates in an environment which enables intellectual risk, choice and critical rigour to flourish.

Our postgraduate and undergraduate programmes are also accredited by relevant local and international professional bodies, which is an indication of our quality within the industry.

The Faculty welcomes you into this vibrant environment where you will be part of a diverse student body in which students are holistically developed as confident, innovative and knowledgeable professionals.

Good Luck and enjoy your studies!

Professor Dr. Yahaya Ahmad
Dean
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INTRODUCTION

The Faculty of Built Environment (FBE) offers five undergraduate professional programmes tailored to meet the nation’s construction and real estate sectors’ manpower needs. All these programmes are accredited at the national and international levels. For example, its Bachelor of Science in Architecture has been accredited with Part I recognition by the Board of Architects Malaysia (LAM) while its 2-year Master of Architecture program leads to Part II recognition by the Board. The same programmes have also been accredited by the Royal Institute of British Architecture (RIBA, UK), leading to Part I and Part II accreditation respectively. RIBA’s recognition is considered an achievement as it is the first program in Malaysia recognised by RIBA and one of only five universities in East Asia.

The faculty’s Bachelor of Building Surveying, Bachelor of Estate Management and Bachelor of Quantity Surveying have all earned their respective accreditations from the Royal Institution of Chartered Surveyors (RICS, UK). The same programmes have been recognised by the respective local professional Bodies. While the Bachelor of Urban and Regional Planning has been accredited by the Board of Town Planners Malaysia.

Despite the fact that the faculty is quite ‘young’ as compared to other established schools in the country, nonetheless, it has managed to attract the best achievers from high schools and matriculation centres. This is well reflected by the high entry point requirements needed for candidates to be considered for intake. Some of our students have shown their achievements and competitiveness by winning numerous awards and medals both locally and internationally. In addition, our students also have an opportunity to be part of outbound exchange programmes abroad and to experience cross-cultural learning from international inbound students.

Some of the faculty’s graduates are employed in different parts of the world such as the United Kingdom, Australia, Singapore, Hong Kong and Indonesia. Thus, the faculty is at the forefront of training students with a high degree of international recognition in tandem with national aspirations of creating ‘Globalised Malaysians’.

The FBE offers postgraduate programmes as follows: the Master of Built Environment (by Research), Master of Real Estate (MRE) Master of Project Management (MPM), Master of Facilities and Maintenance Management (MFMM) and Master of Architecture (M.Arch) – Part II programme are offered
by coursework. In addition, our Master of Real Estate programme is accredited by the Royal Institution of Chartered Surveyors (RICS, UK) since 2013 and Master of Facilities and Maintenance Management programme is accredited by the Royal Institution of Chartered Surveyors (RICS, UK) since 2017.

The challenges faced by the faculty in the oldest and most prestigious university in the nation have inspired it to be regarded as a centre of excellence in the development and dissemination of knowledge and professionalism in the field of the built environment, both nationally and regionally. The FBE has occupied the 10-storey Mercu Alam Bina since October 2012, which is a state-of-the-art building while transforming it as a living lab for research.
VISION, MISSION AND OBJECTIVES

• To be the centre of excellence in the built environment studies and to meet the demands of the construction industry in producing a responsible and competent professionals in the future
• To create a healthy and conducive intellectual environment, equipping its graduates in the ever rapidly changing future
• To strengthen research centres, in line with its position as the leading university in Malaysia, recognised on the territorial, national and international levels
• To contribute knowledge and give consultation to society and the nation in the field of built environment for the development and the well-being of the world

OBJECTIVES

• To advance knowledge and learning through quality research and education for the nation and for humanity

MISSION

• To be an internationally renowned Faculty of Built Environment in research, innovation, publication and teaching

VISION
## ACADEMIC SESSION 2018/2019

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<td>Mid Semester Break II</td>
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<td><strong>10 weeks</strong></td>
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*Public Holiday (Malaysia)*

- Nuzul Al-Quran (2 June 2018)
- Eid al-Fitr (15 & 16 June 2018)
- Eid al-Adha (22 August 2018)
- National Day (31 August 2018)
- Birthday of Seri Paduka Baginda
- Yang dipertuan Agong (9 September 2018)
- Awal Muharam (11 September 2018)
- Malaysia Day (16 September 2018)
- Deepavali (6 November 2018)
- Birthday of Prophet Muhammad s.a.w (20 November 2018)
- Christmas (25 December 2018)
- New Year (1 January 2019)
- Thaipusam (21 January 2019)
- Federal Territory Day (01 February 2019)
- Chinese New Year (05 & 06 February 2019)
- Labour Day (01 May 2019)
- Wesak Day (19 May 2019)
- Nuzul Al-Quran (22 May 2019)
- Eid al-Fitr (05 & 06 June 2019)
- Eid al-Adha (11 August 2019)
- National Day (31 August 2019)
- Awal Muharam (01 September 2019)
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</table>
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EXTERNAL EXAMINER

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ACADEMIC PROGRAMMES

DOCTOR OF PHILOSOPHY (PH.D)  
MASTER OF BUILT ENVIRONMENT  
MASTER OF REAL ESTATE  
MASTER OF PROJECT MANAGEMENT  
MASTER OF FACILITIES AND MAINTENANCE MANAGEMENT  
MASTER OF ARCHITECTURE  

35  
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81
DOCTOR OF PHILOSOPHY (Ph.D)
DOCTOR OF PHILOSOPHY (Ph.D)

Program Overview

PhD students will carry out focused research in their area of specialisation, which is of immediate relevance to local interest.

Additionally, they will be exposed to new developments and challenges in their research topic in the international arena through media, seminars, conferences and keynote addresses and also through research attachments and collaborative exchange arrangements with international recognised research centres.

Entry Requirements

• Bachelor’s degree by research; or
• Bachelor’s degree by coursework or mixed mode with a CGPA of at least 3.70; or
• Master’s degree by coursework or mixed mode with a CGPA of at least 2.00-3.69 and Bachelor’s degree with CGPA at least 3.00; or
• Master’s degree by coursework or mixed mode with a CGPA 2.00-3.69 and Bachelor’s degree with CGPA 2.50-2.99 can be considered if they meet at least one of the following criteria*; or
• Other qualification approved by Senate from time to time.

Additional requirements for international applicants

A minimum score:
• International English Language Testing System (IELTS) (Academic): Band 5.5; or
• Test of English as a Foreign Language (TOEFL): 550 (PBT), 213 (CBT) or 80 (IBT).
• International Candidates are also required to attend and complete satisfactorily the Bahasa Malaysia course by the University before graduation.

* CRITERIA:
1. Possess relevant work experience;
2. Have published in respective fields;
3. Scholarship recipient;
4. Graduate of the University of Malaya;
5. Government agency staff.
Program Structure

This Ph.D programme is purely based on individual supervised research. Candidates will be exposed to Research Methodology Course (3 Credits) to strengthen their research knowledge. At the end of the candidate’s study, a thesis must be submitted and upon successful defence of the paper, the candidate will be granted Ph.D status. All research proposals must be approved and supervised by the Faculty. Ph.D candidates’ thesis must not exceed 100,000 words. They are required to complete their studies within 12 semesters.

Candidacy
Candidacy is for a period of four (4) semesters (minimum) and twelve (12) semesters (maximum).
MASTER OF BUILT ENVIRONMENT
(BY RESEARCH)
MASTER OF BUILT ENVIRONMENT
(BY RESEARCH)

Program Overview
Students will have the benefits of exposure in conducting research in their particular areas of interest or specialisation and acquisition of an understanding of a body of knowledge in the respective area of specialisation.

ENTRY REQUIREMENTS
• Bachelor of Science Architecture, Urban & Regional Planning, Quantity Surveying, Building Surveying, Real Estate or equivalent in a related field from a recognized university with a CGPA of at least 3.0 or equivalent; or
• Applicants with a Bachelor’s CGPA of 2.7-2.99 can be considered if they meet at least one of the following criteria*; or
• Applicants with a Bachelor’s CGPA of 2.50-2.69 can be considered if they meet at least two of the following criteria*; or
• Applicants with a Bachelor’s CGPA of 2.10-2.49 can be considered if they meet the following criteria:
  (a) Graduate of the University of Malaya; AND
  (b) Possess relevant work experience at least five (5) years or have published in respective fields; or
• Other qualification approved by Senate from time to time.

ADDITIONAL REQUIREMENTS FOR INTERNATIONAL APPLICANTS

A minimum score:
• International English Language Testing System (IELTS) (Academic): Band 5.5; or
• Test of English as a Foreign Language (TOEFL): 550 (PBT), 213 (CBT) or 80 (IBT).
• International Candidates are also required to attend and complete satisfactorily the Bahasa Malaysia course by the University before graduation

* CRITERIA:
1. Possess relevant work experience;
2. Have published in respective fields;
3. Scholarship recipient;
4. Graduate of the University of Malaya;
5. Government agency staff.
Programme Structure
This Master’s programme is purely based on individual supervised research. Candidates will be exposed to Research Methodology Course (3 Credits) to strengthen their research knowledge. At the end of the candidate’s study, a dissertation must be submitted and upon successful defence of the dissertation, the candidate will be awarded a Masters’ degree. All research proposals must be approved and supervised by the Faculty. Candidates are required to complete their studies within 8 semesters.

Candidacy
Candidacy is for a period of two (2) semesters (minimum) and eight (8) semesters (maximum).

Upgrade to PhD
A program leading to a doctoral degree (PhD) within the same research area is possible and conversion from Master to PhD is based on merits. The PhD Candidacy is for a period of four (4) semesters (minimum) and up to twelve (12) semesters (maximum). Application for this option should be made before the expiry of the third semester of study (no later than 15 months from registration).
RESEARCH AREAS OR EXPERTISE

Design
Interior Design
Interior Architecture

Business and administration
Real Estate Valuation and Taxation
Real Estate Development and Planning
Real Estate Finance and Investment
Real Estate Economics and Performance
Real Estate Analytics
Real Estate Management and Marketing
Real Estate Training and Professional Development
Housing Management and Strata Management
Property Law

Management and administration
Project Management
Programme Management
Portfolio Management
Performance Appraisal
Human Resources Management
Organisational Theory and Behavior
Quality Management
Logistic Management
Administration
Business Administration
Management Science
Management Skills
Value Management/Value Engineering
Risk Management
Knowledge Management
Lean Management
Financial and Cost Management
ICT Management
Space Planning and Management
Strategic Facilities Planning
Asset and Facilities Management
Facilities Procurement
Performance Management
Maintenance Management
Workplace Productivity
Waste Management

Law
Construction Law
Building Law
Property Law

Architecture and town planning
Building Design
Architectural Technology
Architectural Education
Architectural Theory and Philosophy
Architectural History
Heritage and Building Conservation
Urban Design
Interior Architecture
Landscape Architecture
Professional Practice
Contract Management
Industrial Design
Planning Theory and Philosophy
Housing
Transportation Planning
Tourism and Recreational Planning
Resource and Environment Planning
Land Use Planning
Urban Management and Governance
Technology for Planning
Public and Urban Policy
Sustainable Planning and Development
Universal Design
Visual Digital Media in Architecture
Urban Planning
Regional Planning

Building
Operation and Maintenance
Refurbishment
Construction and Building Technology
Building Services
Building Science and Performance
Building Control and Regulation
Health and Safety
Building Forensic and Pathology
Sustainable Facilities Management
Building Condition Assessment
Building Economics
Building Information Modelling
Professional Practice
Procurement and Contract
Construction Management
Value Engineering
Construction Economics
Building Law
Civil Engineering
Construction Technology
Civil Engineering
Quantity Surveying

Security services
Fire Technology
Fire-Protection (fire fighting)
Ergonomics (occupational health and safety)
Health and Safety in the Work Place
Occupational Health and Industrial Hygiene
Occupational Health and Safety
Stress at Work
Work Environment

Environmental protection
Environmental Conservation
Environmental Protection
Environmental Studies
Natural Resources use Programmes
Natural Resources Conservation
Soil and Water Conservation
Air Pollution Control
Environmental Control
Noise Pollution Control
Recycling
Conservation and Land Management
National Parks and Wildlife
MASTER OF REAL ESTATE
(BY COURSEWORK)
MASTER OF REAL ESTATE
(BY COURSEWORK)

Program Overview
This program aims to create reflective practitioners in the Real Estate Industry, with enhanced knowledge and skills in land and property development. This cutting edge program, designed with inputs from the real estate industry, will significantly strengthen and develop the expertise of contemporary real estate professionals besides meeting the needs of aspiring real estate professionals.

Entry Requirements
- Bachelor of Real Estate Management or equivalent related degree with a CGPA of 3.00 and above; or
- Bachelor of Real Estate Management or equivalent related degree with a CGPA of less than 3.00, at least two (2) years of working experience; or
- Professional qualification from a recognized professional body; or
- Other qualifications approved by the Senate from time to time; or
- Have any other qualifications recognized by the Malaysian Government and approved by the University of Malaya Senate.

Additional requirements for international applicants
- International English Language Testing System (IELTS) (Academic): Band 5.5; or
- Test of English as a Foreign Language (TOEFL): 550 (PBT), 213 (CBT) or 80 (IBT).
- International Candidates are also required to attend and complete satisfactorily the Bahasa Malaysia course by the University before graduation.

Delivery and Attendance
- The minimum duration of the program is two (2) normal semesters (one year) and one (1) special semester, with the maximum is eight (8) semesters (four years).
- Classes will be conducted through after-office and / or weekend session.
- The program is offered at University of Malaya’s Faculty of Built Environment, Kuala Lumpur.
- The program is delivered through lectures, tutorials and coursework.
Conferment of Degree
Upon successful completion of the program, students will be conferred the Master of Real Estate degree from the University of Malaya.

Program Structure and Assessment
This program consists of 11 courses apportioned as follows: Semester 1 has four compulsory courses, Semester 2 has four compulsory courses and two elective courses from three choices and Semester 3 (Special Semester) has one progressive course. Altogether students must undertake 10 courses. Each course is delivered over a 14-week period, except for BQA7002 (Research Project) which is conducted over two semesters. The courses are assessed by examination and / or continuous assessment.

Programme Outcomes

Graduates will be able to:
1. Enhance the knowledge of property development to meet academic and industry needs locally and internationally
2. Apply knowledge and skills in coordinating and managing various types of property effectively
3. Undertake social responsibility in providing real estate consulting and valuation services
4. Demonstrate professionalism in implementing property management services to meet the needs of industry and communities
5. Communicate and work effectively in industry and communities to make investment decisions and property development
6. Develop analytical capabilities and problem solving skills
7. Possess relevant information and knowledge in property consulting and valuation services
## Course Structure

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<td>BQA7004</td>
<td>Property Law and Institutional Framework</td>
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<td>BQA7007</td>
<td>Property Market Research and Marketing</td>
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<td>BQA7005</td>
<td>Property Finance and Investment Analysis</td>
<td>4</td>
<td>BQA7008</td>
<td>Valuation and Investment Appraisal</td>
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**Elective: (Choose 1 Only)**

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<th>Subjects</th>
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<th>Semester 2</th>
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<td>BQA7010</td>
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**Total Credits** 45
SYLLABUS SUMMARY

BQA7001 RESEARCH METHODOLOGY IN REAL ESTATE

3 Credits Students will be exposed to real estate research elements and processes of problem and hypothesis formulation, research design, data collection and analysis methods, developing the conclusion, and writing the research report. Data collection and sources of data, library research, research methodologies in terms of the general philosophies and detailed research methods. Computer usage: SPSS and other relevant software.

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

1. Apply qualitative and quantitative methods that are applicable to evaluate real estate related research.
2. Apply the theory and techniques of developing and conducting research in real estate development.
3. Illustrate communication skills that contain critical thinking and problem solving elements.
4. Structure a research proposal.

BQA7002 RESEARCH PROJECT (P)

12 Credits This course requires the students to conduct research and write a research report under supervision.

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

1. Develop a research framework
2. Apply appropriate research methodology
3. Demonstrate data collection and analysis using appropriate techniques
4. Synthesize research results and findings
5. Relate information and express ideas clearly and effectively
BQA7003  DEVELOPMENT ECONOMICS AND PLANNING

4 Credits  Characteristics of land as an investment, its importance, market trend and property performance in various economic condition; rent and location theories as well as theories related to urban structure and growth; government intervention in property market, and urban problems.

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

1. Classify the theories and issues related to development and planning
2. Distinguish urban real estate issues in land development.
3. Predict potential property development
4. Evaluate problem solving measures in the context of real estate development process.

BQA7004  PROPERTY LAW AND INSTITUTIONAL FRAMEWORK


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

1. Identify relevant legislation framework suitable for land development
2. Integrate knowledge in determining requirements and restrictions to be adhered to in land development.
3. Relate the development laws to the environmental management aspect of sustainable development
4. Criticise the current regulatory framework
BQA7005  PROPERTY FINANCE AND INVESTMENT ANALYSIS

4 Credits  Financial and capital market (secondary mortgage market REITs); the relationship between investment and property development; investment technique and financing (financing property development, residential product, income-generating property); financial and investment analysis; capital budgeting and portfolio theory.
At the end of the course students will be able to:

1. Identify the principles of financial and investment property
2. Distinguish techniques of financial analysis and investment-related
3. Evaluate the performance of real estate investment
4. Choose the best option for real estate investment devise.

BQA7006  REAL ESTATE DEVELOPMENT PROCESS

4 Credits  Parties and institutions involved in property development; development process from initial stage to handing over vacant possession, development process models; impact of public policy and legislation restrictions; fundamental of project management and project appraisals; risk management.
At the end of the course students will be able to:

1. Identify real estate development process models
2. Establish relevant attributes of a successful property development
3. Identify relevant negotiation techniques
4. Assess the performance and viability of the development
BQA7007  PROPERTY MARKET RESEARCH AND MARKETING

4 Credits  Property market research: data collection; types and methods, survey design, sampling, data analysis, forecasting: economy and property market (behaviour and trends, economy/property cycle) and research findings.

Property marketing: characteristics and market segment, market catchment, market positioning, principles and strategies in marketing management, marketing skills

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

1. Identify marketing techniques and real estate market research
2. Develop the relevant attributes towards a successful real estate marketing
3. Produce a real estate market study report
4. Evaluate real estate market research findings

BQA7008  VALUATION AND INVESTMENT APPRAISAL

4 Credits  Methods of valuation and discounting techniques; Market, Cost and Income methods as outlined by the International Valuation Standard and the 5 methods by the Malaysian Valuation Standard in determining the Market Value of various types of landed property. Explain and apply the various types of investment appraisals.

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

1. Determine the different property valuation approaches
2. Apply the valuation methods and discounting techniques
3. Appraise the suitability of valuation methods for different types of property.
4. Explain and apply the various types of investment appraisals
BQA7009  CORPORATE REAL ESTATE

3 Credits  Strategies in managing effective real estate portfolio, operational and non-operational real estate; strategic planning and analysis; legal, economic and technical aspects in execution of portfolio management; space planning; lease and tenancy; merger, acquisition and disposal; corporate financing.

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

1. Recognise corporate holdings in real estate.
2. Perform strategic decision-making in real estate investment portfolio.
3. Evaluate performance of real estate
4. Appraise real estate tenure decisions

BQA7010  REAL ESTATE PROJECT MANAGEMENT

3 Credits  This course provides basic knowledge and skills required to manage a project or to be an effective member of a project team. It covers the nine functions of project management (cost, time, quality, scope, risk, communication, human resource, procurement and integration) tracking a project through its various lifecycles from inception through to completion.

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

1. Determine the development of modern project management
2. Identify project stakeholders’ key factors associated with successful execution of projects.
3. Formulate measurable criteria for assessment of project performance and success.
4. Evaluate constraints and assumptions, related projects and out of scope activities
BQA7011  SUSTAINABLE REAL ESTATE DEVELOPMENT

3 Credits  Sustainability is a wide topic in real estate. This course provides the basic knowledge of sustainable development principles in real estate development. It translates the abstract concepts of sustainability into tangible trends and cases to assist in understanding of sustainable real estate development including, but not limited to, the green building movement and city development concepts.

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

1. Identify sustainable development principles and practices in real estate development.
2. Apply sustainable development principles in real estate development.
3. Appraise institutional factors that could affect sustainable real estate development.
MASTER OF PROJECT MANAGEMENT
(BY COURSEWORK)
MASTER OF PROJECT MANAGEMENT  
(BY COURSEWORK)

Program Overview

This program intends to create Professional Project Managers that are knowledgeable and competent, possess ethics and social responsibility, as well as are aware of the need to promote sustainability. Students are trained with the skills to handle problems, challenges and a project management perspective in a global context. Among others, disciplines stressed in this program include Principles of Project Management, Project Management Professional Development, Project Investment and Financial Management, Organisational and Strategic Management, and also Value and Risk Management. The multi-disciplinary approach in the program also allows exploration of other disciplines that are relevant to project management including Health and Safety Management, Information and Telecommunication Management, Legal Issues in Project Management as well as Assets and Facilities Management. The component that is given emphasis in this program is research in selected areas specific to project management, so that students are trained to become effective analyzers and develop skills towards problem solving using scientific approach.

Entry Requirements

- Bachelor of Building Surveying, Quantity Surveying, Estate Management, Architecture, Urban & regional Planning, Engineering, IT, Sciences, Business or equivalent qualification in a relevant discipline with CGPA of 3.00 and above; or
- Professional qualification from a recognized professional body; or
- Other qualifications as written by the Senate from time to time; and
- Having relevant working experience of at least one (1) year; or
- Bachelor of Building Surveying, Quantity Surveying, Estate Management, Science Architecture, Urban & regional Planning, Engineering, IT, Sciences, Business or equivalent qualification in a relevant field with a CGPA of less than 3.00 and at least three (3) years relevant working experience.
Additional requirements for international applicants

• International English Language Testing System (IELTS) (Academic): Band 5.5; or
• Test of English as a Foreign Language (TOEFL): 550 (PBT), 213 (CBT) or 80 (IBT).
• International Candidates are also required to attend and complete satisfactorily the Bahasa Malaysia course by the University before graduation.

Delivery and Attendance

• The minimum duration of the program is three (3) normal semesters or one and a half (1½) years while the maximum duration is eight (8) semesters or four (4) years.
• Classes will be conducted through after-office and / or weekend session.
• The program is offered at University of Malaya’s Faculty of Built Environment.
• The program is delivered through lectures, tutorials and coursework.

Conferment of Degree

Upon successful completion of the program, students will be conferred the Master of Project Management degree from the University of Malaya.

Programme Structure and Assessment

This program consists of 12 courses. Each course is delivered over a 14-week period (normal semester). The courses are assessed by examination and/or continuous assessment.

Programme Outcomes

Graduate will be able to:

• Demonstrate in-depth comprehension of the 10 areas of project management as identified in the Project Management Body of Knowledge Guide (PMBOK).
• Apply project management skills in a project environment.
• Apply the right techniques and technology of project management in work environment.
- Demonstrate the required level of professionalism and commitment to ethical practice.
- Demonstrate the ability to provide clear, reasonable and professional views in all forms of communication and ability to work independently and in groups as a leader.
- Analyse the problem of assessing strategic options and being able to make decisions with supporting evidence and providing good judgement.
- Demonstrate the ability to improve knowledge to enhance self-formation.

**Course Structure**

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<th>Component</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
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<td>BQB7006</td>
<td>Organizations and Strategic Management for Projects</td>
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SYLLABUS SUMMARY

BQB7001 RESEARCH METHODOLOGY FOR PROJECT MANAGEMENT

3 Credits

Students will be exposed to the elements and processes of scientific research problem and hypothesis formulation, research design, data collection and analysis methods, forming conclusions, and writing research reports. Data collection and data sources, library research, research methodology, philosophy of science in general and research methods in detail. The use of computers: SPSS, and other software.

Students will be able to:
1. Practice different types of qualitative and quantitative methods related to the assessment, methods of project management, data interpretation and report writing.
2. Communicate with critical thinking and problem solving skills.
3. Apply the theory and technique development and implementation of research in related fields.

BQB7002 RESEARCH PROJECT I

5 Credits

Research projects involving the production of scientific information through research methodologies that have been studied. Research will be conducted on the basis of the title and the scope proposed by students and supervised regularly by designated supervisors. Time commitment involves the formation justification of project planning, project implementation, collecting research data, reading or literature search, and the writing of the results of the project. At this stage, students will produce 3 chapters which include the introduction, literature review and research methodology.

Students will be able to:
1. Identify and write with a concise explanation of why the project is needed.
2. Have the skills and knowledge in the application of concepts and strategies in a research project.
3. Apply the skills of problem solving and scientific skills.
BQB7003  RESEARCH PROJECT II
5 Credits  Research projects involving the production of scientific information through research methodologies that have been studied. Research will be conducted on the basis of the title and the scope proposed by students and supervised regularly by designated supervisors. Time commitment involves the formation justification of project planning, project implementation, collecting research data, reading materials or literature search, and the writing of the results of the project. At this stage, students will produce a balance of about 6 chapters comprising of data collection, analysis discussion and conclusions. It also includes a complete research report produced by integrated with previous chapters that have been generated during the course investigational of Research Project I and comply with the procedures earnings reports research projects required by the university.

Students will be able to:
1. Apply the theories learned to the academic research.
2. Apply the data collection and analysis skills learned to the research.
3. Present the research results and findings in an academic manner.

BQB7004  PRINCIPLES OF PROJECT MANAGEMENT
3 Credits  The course contains the fundamentals of the project, the project management process, project planning and project execution and closure. These include the establishment of the project organization, the establishment of effective leadership, team preparation, settlement issues, effective implementation (performance measurement, monitoring and control, coordination, record, report status, communication, conflict management), and the closure of the project (measurement of project success, closure contracts, data transfer, learning, and administrative closure).

At the end of this course, students can:
1. Explain the concept and principles of project management.
2. Analyse effective project management methodology towards a successful and effective projects.
3. Apply effective project plan covering the period of the project, monitoring and controlling the project delivery (including implementation and closure).
BQB7005 PROJECT MANAGEMENT PROFESSIONAL DEVELOPMENT I

3 Credits This course provides an overview of the aspects covered by the Project Management Institute (PMI) Project Management Professional certification (PMP) by the Project Management Body of Knowledge (PMBOK). Five of the ten knowledge areas contained in the PMBOK that will be covered are:
1. Project Integration Management,
2. Project Scope Management,
3. Project Schedule Management,
4. Project Cost Management, and
5. Project Quality Management.

At the end of the course, students are able to:
1. Discuss about Project Management Body of Knowledge (PMBOK).
2. Identify best practices recognized by the discipline of project management for implementation into a successful project management.
3. Apply a successful project management disciplines through a strong foundation, intellectually, and professionally.

BQB7006 ORGANIZATIONS AND STRATEGIC MANAGEMENT FOR PROJECTS

3 Credits The course includes a review of scientific results in organization and strategic management for the project. The course will also look at how to formulate corporate decisions related to the project.

At the end of this course, students can:
1. Explain the concept and principles of organization and strategic management for the project.
2. Understand the context of strategic management and project organization.
3. Analyse and relate it to another level in project management.
BQB7007 INTEGRATED PROJECT

6 Credits Students will be guided and supervised by the lecturer. The theme for the given issues and problems in the course of project work is based on the elements of one or a combination of knowledge related to project management. Students are required to present and defend the results of project work courses given in the seminar.

At the end of the course, students are able to:
1. Understand the interests of the combination and integration of knowledge.
2. Relate concepts, principles, techniques and the academic knowledge acquired.
3. Apply the knowledge gained and confidence to solve problems.

BQB7008 PROJECT MANAGEMENT PROFESSIONAL DEVELOPMENT II

3 Credits This course provides an overview of the aspects covered by the Project Management Institute (PMI) Project Management Professional certification (PMP) by the Project Management Body of Knowledge (PMBOK). Five of the ten knowledge areas contained in the PMBOK that will be covered are:
1. Project Resource Management,
2. Project Communication Management,
3. Project Risk Management,
4. Project Procurement Management, and
5. Project Stakeholder Management.

At the end of the course, students are able to:
1. Discuss about Project Management Body of Knowledge (PMBOK).
2. Identify best practices recognized by the discipline of project management for implementation into a successful project management.
3. Apply a successful project management disciplines through a strong foundation, intellectually, and professionally
BQB7009  VALUE AND RISK MANAGEMENT FOR PROJECTS
3 Credits  This course introduces the general theories of value engineering/value management and risk management as part of the process involved in project management. Each element will be emphasized in terms of theory, methodology and practical applications for the project.

At the end of the course, students are able to:
1. Identify the value and risk management aspects that are needed in projects.
2. Explain the concepts and principles of value and risk management in projects.
3. Develop the skills and methods of implementation of value and risk management in the context of projects.

BQB7010  PROJECT INVESTMENT AND FINANCIAL MANAGEMENT
3 Credits  This course provides an in-depth view of the processes in project finance, project costs and entrepreneurial project management. Project finance includes the allocation, management and funding of financial resources. This partly involves short-term dealing with day-to-day working capital decisions; another part is longer-term, involving major capital investment decisions and raising long-term finance. Private Finance Initiative (PFI) and Public Private Partnership (PPP) procurement systems will also be explored during the course of this subject.

At the end of the course, students are able to:
1. Explain the financial concepts, especially opportunity cost and time value of money.
2. Discuss the ways in which business plans are developed and the role of projected financial statements in the planning process.
3. Analyze capital budgeting projects and focus on the short-term and long-term financial implications of business decisions.
BQB7011 HEALTH AND SAFETY MANAGEMENT
3 Credits Students will be exposed to the latest safety management and comprehensive. Statutory requirements, regulations and laws related to security such as the Occupational Safety and Health Act 1994 (OSHA) and the Factories and Machinery Act 1967 (MFA) will be studied in depth. Coverage of topics related to the establishment and implementation of safety and health programs such as pre-bid consideration, planning and scheduling, personal training, orientation and health and safety audit.

At the end of the course, students are able to:
1. Exposure to current and comprehensive occupational safety and health management
2. Identify the safety and health problems individually, conduct an investigation and preparing safety plan activities
3. Evaluate the impact and capable of using the program and procedures for effective safety and health in the project.

BQB7012 LEGAL STUDIES FOR PROJECT MANAGEMENT
3 Credits This module provides an overview of the legal issues that will be faced during the project life cycle.

At the end of the course, students are able to:
1. Describe the knowledge of the management rights and responsibilities, agency and representation, contract formation and negotiation of contracts, dispute prevention and settlement.
2. Identify the legal implications of the associated issues by taking into account ethical project management contract procurement.
3. Assess the acquisition strategy in project management contract by concrete evidences.
BQB7013 ASSETS AND FACILITIES MANAGEMENT
3 Credits This module explores the strategy and operation of facilities management. Facility management strategy includes the introduction of discipline to the management of facility management. Facilities management operation look to external constraints in corporate priorities including issues that affect the theory of why the organization determine its position and overall look of the four main areas of facility management in the management plan; security, cleaning; energy, and repair & maintenance; which use higher cost of facilities.

At the end of the course, students are able to:
1. Understand the strategies and operational facility management.
2. Translating the main capital through proper maintenance and achieve the value of the cost of daily operations
3. Apply appropriate management theory to meet the core objectives of a business

BQB7014 IT MANAGEMENT FOR PROJECTS
3 Credits The course aims to introduce different techniques for managing projects and increased project management skills. These include exposure to a variety of concepts and project management application using information technology. Course contents include information technology tools and techniques used in the design and implementation of projects that involve budgeting, human resources, and physical resources. It also touches on the scope of the project, time management, cost management, project integration management, risk management, human resources and quality.

At the end of the course, students are able to:
1. Develop knowledge in a business context and technical developments of the management aspects of information technology in contemporary projects.
2. Build good relationships and interaction through the management of information technology projects.
3. Use conceptual and analytical approaches to the management of information technology projects.
MASTER OF FACILITIES AND MAINTENANCE MANAGEMENT
(BY COURSEWORK)
MASTER OF FACILITIES AND MAINTENANCE MANAGEMENT (BY COURSEWORK)

Program Overview

The programme aims to produce professional Facilities Management and Maintenance graduates who are critical and innovative towards sustainable development globally

Entry Requirements

- Bachelor’s Degree in Built Environment or equivalent qualification with a Cumulative Grade Point Average (CGPA) of at least 3.0 or above; or
- Bachelor’s CGPA of 2.7-2.99 can be considered if they meet at least one of the following criteria*; or
- Bachelor’s CGPA of 2.50-2.69 can be considered if they meet at least two of the following criteria*; or
- Bachelor’s CGPA of 2.10-2.49 can be considered if they meet the following criteria*; or
- (a) Graduate of the University of Malaya; AND
- (b) Possess relevant work experience at least five (5) years or have published in respective fields.
  or
- Other qualification which is approve by the University Senate from time to time

* CRITERIA:
1. Possess relevant work experience;
2. Have published in respective fields;
3. Scholarship recipient;
4. Graduate of the University of Malaya;
5. Government agency staff.

Additional requirements for international applicants

- International English Language Testing System (IELTS) (Academic): Band 5.5; or
- Test of English as aForeign Language (TOEFL): 550 (PBT), 213 (CBT) or 80 (IBT).
- International Candidates are also required to attend and complete satisfactorily the Bahasa Malaysia course by the University before graduation
Delivery and Attendance
- The minimum duration of the programme is two (2) normal semesters and one (1) special semester or one (1) year and the maximum period is eight (8) semesters or four (4) years.
- Classes will be conducted through after-office and/or weekend sessions.*
- The programme is offered by attendance at University of Malaya’s Faculty of the Built Environment, Kuala Lumpur.
- The programme is delivered through formal lectures, laboratory, tutorials and coursework.
* Subject to Management’s approval

Conferment of Degree
Upon successful completion of the programme, students will be conferred the Master of Facilities & Maintenance Management degree from the University of Malaya.

Programme Structure and Assessment
This program consists of 10 courses. Each course is delivered over a 14-week period (normal semester) or 8-week period (special semester). The courses are assessed by examination and/or continuous assessment.

Programme Outcomes
PO1 Synthesize knowledge, skills and good management practice in the field of facilities management and building maintenance
PO2 Integrate knowledge and ability in solving building facilities problems with critical, creative and innovative approach
PO3 Demonstrate communication and interaction skills among team members in the context of facilities management and building maintenance
PO4 Propose consultation works in the context of facilities management and building maintenance
PO5 Express high leadership qualities and ability to work in groups
PO6 Develop and apply techniques, resources and tools for research on facilities and building maintenance research
PO7 Inculcate awareness and ethics regarding social, health, safety, and legislation issues in facilities management and maintenance
PO8 Cultivate awareness on the importance of entrepreneurship and sustainable development; and
PO9 Cultivate readiness in the facilities management and maintenance career development for lifelong learning
## Course Structure

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<td>Research Project</td>
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<td>BQC 7012</td>
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**TOTAL CREDIT** 46

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SYLLABUS SUMMARY

BQC7001  RESEARCH METHODOLOGY
3 Credits This course introduces the students to the field of research. It examines in depth the research process and introduces the student to the various aspect of doing social and scientific research related to facilities and maintenance management. The topics covered include research process, research design, data collection and analysis process, and reporting of research results.

At the end of the course, students are able to:
1. Interpret research principles, processes and the requirements for conducting research within facilities and maintenance management
2. Develop critical theoretical literature reviews, research methods and systematic approaches applicable to facilities and maintenance management
3. Practise awareness and ethics in executing good research project

BQC7002  RESEARCH PROJECT
12 Credits Research projects will involve the generation of new scientific information and a review and understanding of the pertinent scientific literature. The research may be conducted in a university laboratory, organisation, etc., depending upon the project and the supervisor. The time commitment includes developing a justified research plan, implementing that plan, gathering the research data, reading or searching literature, and writing up the results of the project.

At the end of the course, students are able to:
1. Apply skills, knowledge and good management on the application of concepts and strategies in research project.
2. Integrate knowledge, communication skills and critical thinking in solving research problems
3. Apply theory and techniques of facilities management in formulating research project.
4. Practise ethics in the research project.
BQC7003  ORGANIZATIONAL BEHAVIOUR AND RESOURCE MANAGEMENT

3 Credits  This course is about theories of organisational behaviour and resource management. Topics include management theories and concept, effective communication, leadership, decision making process, human resource management, ethics and performance evaluation.

At the end of the course, students are able to:
1. Identify teamwork skills in management organization which include relationship of individual, industries and workplace environment
2. Interpret knowledge of theories in organizational concept and effective resource management
3. Explain issues and problems in organization and human behaviour through critical and practical approach

BQC7004  OPERATION & MAINTENANCE

4 Credits  This course aims to devise and develop a strategic approach to the understanding of the role of asset and facilities maintenance in meeting corporate objectives; and reviews the principles of the guideline and legislation affecting asset maintenance. The course will also examine the building services and fabric, their life cycle and the maintenance, refurbishment, maintenance strategy and effectiveness; management organization; planning and co-ordination techniques; and managing cost effectiveness.

At the end of the course, students are able to:
1. Discuss procedures for operation and maintenance of asset and facilities
2. Analyse guideline and legislation in the current practices of asset and facilities maintenance
3. Appraise techniques and technologies in asset and facilities maintenance
BQC7005  TOTAL ASSET AND FACILITIES MANAGEMENT
4 Credits  This module examines the strategic and operational total asset and facilities management. Strategic facilities management include the introduction of management discipline to the facilities management. Operational facilities management looks at external constraints on corporate priorities which include the theoretical issues influencing why an organization locates where it does and take an overview of four of the major facility operational areas that are amenable to management: Security, Cleaning, Energy, and Repairs & Maintenance, which consume major portion of facilities costs.

At the end of the course, students are able to:
1. Identify the total asset & facilities management theory
2. Apply strategic and operational total facilities management to fulfill the core organizational objectives
3. Decide appropriate management system in achieving value added in operational maintenance and facilities management

BQC7006  PROCUREMENT & CONTRACT MANAGEMENT
4 Credits  This course introduces how business support are developed and outsourced competitively via strategic or conventional FM service delivery framework. Student will also learn a how FM contracts is managed that are made as part of the delivery of a built asset. It involves the creation, analysis and execution of contracts by the parties to those contracts to ensure operational and financial performance is maximised, and risks are minimised between a service provider (either internal or external) and the end user that defines the level of service expected from the service provider.

At the end of the course, students are able to:
1. Identify the type, process, procedure, procurement and liability of contract.
2. Determine the key component parts in a Service Level Agreement.
3. Evaluate contract performance measurement systems in facilities management.
4. Prepare a service level agreement
BQC7007  BUILDING PERFORMANCE, PRODUCTIVITY AND WELLBEING

4 Credits  Introduction to environmental quality in buildings, and ways of producing desirable environments in energy, resourceful and efficient manner. This module aims to enable students to understand the role and utilisation of the physical asset within facilities management that could affect its occupant’s productivity and wellbeing as well as the energy usage.

At the end of the course, students are able to:
1. Identify green building principles and practices.
2. Discuss various methods of implementation in energy audit.
3. Propose sustainable or green building solutions.

BQC7008  FINANCIAL AND BUSINESS MANAGEMENT

4 Credits  This module examines the financial and business management elements within facilities management context. Focus is given to the fundamental principles of financial management and the concept of best value in facilities management. Among the core components of this course appraise on the strategic analysis of business requirements, financial control, fundamental financial analysis tools and facilities management financial models. This module also covers on the theories in forecasting and managing future financial requirements.

At the end of the course, students are able to:
1. Identify the theories and application of business and financial management in facilities management
2. Appraise the suitable financial management tools towards effective facilities and business performance
3. Integrate the function of financial analysis in organizational decision making
BQC7009  STRATEGIC FACILITIES MANAGEMENT PROJECT
5 Credits  Candidate will learn and demonstrate how strategic FM delivery framework can be applied to business organisation. This course aims to enable students to understand FM business strategy, appraise and analyse the diverse nature of developing strategic facility project. Student will acquire the way to optimise FM knowledge by means of appropriate management of information system and operational processes. Students are required to present the results of FM project work courses in seminar.

At the end of the course, students are able to:
1. Determine relationship between strategic facility planning and business strategy for FM project.
2. Identify appropriate framework for strategic facility planning, with appropriate procurement method.
3. Structuring the management of key information on FM system for business performance.
4. Critically evaluate the impact (benefits and challenges) and use of FM system on facility life cycle.

BQC7010  SUSTAINABLE AND ENVIRONMENTAL MANAGEMENT
3 Credits  Understanding of sustainability and climate change is vital topic in development. This course provides fundamental knowledge of sustainable development principles and effects of climate change. It Integrates sustainable development issues including, but not limited to, sustainable economics & policy, green building movement and life-cycle assessments. It translates the abstract concepts of sustainability into Environmental Management System (EMS) practice of development and facilities management.

At the end of the course, students are able to:
1. Identify sustainable development principles and practices in facilities management
2. Apply sustainable development principles in facilities management to mitigate environmental risks
3. Integrate professional skills in achieving sustainable environmental management system
BQC7011 CORPORATE REAL ESTATE
3 Credits
Strategies in managing effective real estate portfolio, operational and non-operational real estate; strategic planning and analysis; legal, economic and technical aspects in execution of portfolio management; space planning; lease and tenancy; merger, acquisition and disposal; corporate financing

At the end of the course, students are able to:
1. Identify corporate holdings in real estate.
2. Select strategic decision-making in real estate investment portfolio.
3. Evaluate performance of real estate
4. Appraise real estate tenure decisions

BQC7012 PRINCIPLES OF PROJECT MANAGEMENT
4 Credits
The course contains the fundamentals of the project, the project management process, project planning and project execution and closure. These include the establishment of the project organization, the establishment of effective leadership, team preparation, settlement issues, effective implementation (performance measurement, monitoring and control, coordination, record, report status, communication, conflict management), and the closure of the project (measurement of project success, closure contracts, data transfer, learning, and administrative closure)

At the end of the course, students are able to:
1. Explain the concept and principles of project management.
2. Analyse effective project management methodology towards successful and effective projects.
3. Apply effective project plan covering the period of the project, monitoring and controlling the project delivery (including implementation and closure)
MASTER OF ARCHITECTURE
(BY COURSEWORK)
MASTER OF ARCHITECTURE
(BY COURSEWORK)

Program Overview

The programme is serviced by highly qualified and experienced lecturers including one (1) Professor and two (2) Associate Professors. Students are frequently assessed by professionally qualified architects who are at the forefront of the building industry through regular ‘crit’ sessions and reviews. This Master by coursework programme is run in a self-contained facility with well-equipped studios, wood and model workshop, building laboratory, computing and printing facilities. More than 150 graduates have successfully graduated from the predecessor for this programme (the Bachelor of Architecture; LAM/RIBA Part II accredited/validated) and continued to fulfil their aspirations.

Entry Requirements

Local applicants are required to have:
• Bachelor of Science in Architecture University of Malaya with a minimum CGPA of 3.00 and passed the course Architectural Design Studio Final Level with minimum Grade B; Or
• Bachelor of Science in Architecture University of Malaya with a minimum CGPA of 2.75 and have relevant work experience for at least 6 months after obtaining the degree; And
• pass the interview portfolio; Or
• Bachelor of Science/Arts in Architecture or equivalent with a minimum CGPA of 3.00 from any university approved by the Senate as equivalent to a Bachelor of Science in Architecture University with honors; And
• meet the requirements of Part I of the Board of Architects Malaysia (LAM); And
• have relevant working experience for at least 6 months after obtaining the degree; And
• pass the interview portfolio

International applicants are required to have:
• Have other qualification recognized as equivalent to the Special Conditions of the program recommended by the Malaysian Government and the University Senate; And
• Meet the requirements of Part I of the Board of Architects Malaysia (LAM); And
• Pass interview / assessment portfolio; And
• International English Language Testing System (IELTS) (Academic): Band 5.5; or
• Test of English as a Foreign Language (TOEFL): 550 (PBT), 213 (CBT) or 80 (IBT); and
• International Candidates are also required to attend and complete satisfactorily the Bahasa Malaysia course by the University before graduation

Delivery and Attendance
• The minimum duration of the programme is two (2) normal semesters and one (1) special semester or one (1) year and the maximum period is eight (8) semesters or four (4) years.
• Classes will be conducted through after-office and/or weekend sessions.*
• The programme is offered by attendance at University of Malaya’s Faculty of the Built Environment, Kuala Lumpur.
• The programme is delivered through formal lectures, laboratory, tutorials and coursework.
* Subject to Management’s approval

Conferment of Degree
Upon successful completion of the programme, students will be conferred the Master of Architecture degree from the University of Malaya.

Programme Structure and Assessment
This program consists of 10 courses. Each course is delivered over a 14-week period (normal semester) or 8-week period (special semester). The courses are assessed by examination and/or continuous assessment.

In the Master of Architecture programme, all design-related courses will have 100% continuous assessment. In courses where final examination is carried out, coursework assignment constitutes 40% while end of semester examination constitutes 60% of the overall marks.
Programme Outcomes

Graduates will:

- Command adequate knowledge in the areas of design, research, technology, management practices law, culture and theory related to the field of architecture.
- Use practical skills and computer software in researching, designing, and managing projects spanned architecture to achieve the requirements of clients and stakeholders in the construction industry.
- Demonstrate social skills and responsibility towards society and the environment in designing, researching, managing and implementing architectural projects.
- Applying ethical values, professionalism and integrity in advising clients and dealing with parties interested in the construction industry.
- Communicate effectively, capable of teamwork and leadership skills in managing architectural projects.
- Using scientifically researching skills in problem solving and decision making and technical design for architectural projects.
- Using information management skills and the ability to lifelong learning for designing architectural projects.
- Using managerial and entrepreneurial skills in managing architectural projects and presenting ideas to clients to ensure the benefits and use of resources fully.
## Course Structure

<table>
<thead>
<tr>
<th>Group</th>
<th>Code</th>
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<td>Architecture Theory &amp; Philosophy</td>
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<td>Interior Architecture</td>
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<td>BAGS6320</td>
<td>Landscape Architecture</td>
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<td>BAGS6321</td>
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<td>Total/Semester</td>
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Total Semester Credits: 65
SYLLABUS SUMMARY

BAGS6101 ADVANCED ARCHITECTURAL DESIGN I

7 credits Students will design a cultural building and apply relevant passive design strategies; and design a complex building within an urban context. This course entails possible collaboration with students from other institution.

At the end of the course, students are able to:
1. Summarize precedent studies on climactically responsive buildings.
2. Apply passive design strategies on the architectural solutions of a small cultural building typology.
3. Integrate green building approach into a project related to a complex building typology.
4. Design appropriate architectural solutions comprising drawings and models incorporating the architectural project issues that comprise sustainable design strategies.

BAGS6102 ADVANCED ARCHITECTURAL DESIGN II

7 credits Students will design and affordable high-density housing project; focus on the psychological and physiological aspects of a human being, communal living and socio-cultural issues and; apply theories and principles of housing design such as defensible spaces, security by design, crime prevention through environmental design (CPTED) and clustering or block grouping to accelerate social interaction

At the end of the course, students are able to:
1. Summarize lessons learned from research on precedent studies into a project brief of complex buildings or high density housing in an urban context.
2. Apply building statutory and other development requirements, taking into consideration the feasibility study to inform and justify the viability of the project.
3. Share views and opinions academically through discussions with people from different cultural backgrounds or related disciplines.
4. Design appropriate architectural solutions comprising drawings and models incorporating the architectural project issues which comprises of site planning, contextual studies, social-cultural issues and universal design.
BAGS6203 PRE THESIS RESEARCH

3 credits  Students will conduct an in depth study to form a viable and suitable architectural design thesis project with adequate complexity; involve identification, analysis and development of the proposal for the design thesis project and; verbally present their proposals with appropriate visuals accompanied with a written document. This written document will be the foundation for the design thesis project in the following semesters.

At the end of the course, students are able to:
1. Determine the conceptual framework based on research topic to assist the formulation of a design brief.
2. Prepare a comprehensive report for proposed topic.
3. Justify selection of design topic / project.

BAGS6204 ARCHITECTURAL DESIGN THESIS I

8 credits  Students will develop works that were produced in BAGS 6203, Pre Thesis Research to get a design concept that can be applied based on acquired hypotheses and problem statements. Through this course, students will refine and develop the design concept up to the design development stage.

At the end of the course, students are able to:
1. Discuss design thesis concept based on areas of research such as sustainable design, building typology, conservation/adaptive reuse, site/issue-driven arguments and community architecture.
2. Translate design concept into detailed architectural design scheme.
3. Analyse site through series of studies from macro to micro level.
4. Defend design thesis project through verbal and architectural graphics.
BAGS6205 ARCHITECTURAL DESIGN THESIS II

8 credits
This course is a continuation of the development of conceptual design, ideas and scheme explored in BAGS 6204 Architectural Design Thesis I. The emphasis is on the development of: an architectural design proposal; design of the special studies and; design proposal report

At the end of the course, students are able to:
1. Translate design concept into a detailed architectural design proposal.
2. Report a special study that focuses on the core ideas of the design thesis project.
3. Defend design thesis project through verbal and architectural graphics.
4. Justify design proposal in a written report.

BAGS6106 RESEARCH METHODOLOGY

3 credits
Students will be exposed to: library search; research methodology; scientific research elements; problem formulation process and hypotheses; research design; data collection; data analysis; research findings; writing up and; the use of computer software SPSS

At the end of the course, students are able to:
1. Apply qualitative and/or quantitative research methods suitable to the research scope, data analysis and academic writing.
2. Apply theory and techniques of research development and implementation.
3. Debate effectively based on critical thinking and problem solving skills.
BAGS6207 ARCHITECTURAL RESEARCH I

5 credits  This course guides the students on how to write a major piece of academic writing as a partial requirement for the conferment of the degree. The students are encouraged to select a topic or issue for dissertation in design or a related field. It may be concerned with any aspect of architecture such as history, theory, aesthetics, technology, sociology, philosophy, anthropology, town planning, conservation or landscape design. For each dissertation, a supervisor will be appointed to monitor the student progress and advice on source material and writing up.

At the end of the course, students are able to:
1. Enumerate critically literature review.
2. Report primary and related data.
3. Analyse data and syntheses findings.

BAGS6208 ARCHITECTURAL RESEARCH II

3 credits  This course totally depends totally on discussions between the student and supervisor. Discussions cover: various levels of journals; communication with journals; writing research papers; writing for publication and; presentation techniques.

At the end of the course, students are able to:
1. Organise architectural research thesis outcome.
2. Experiment ready-made information.
3. Compose an academic paper.
BAGS6109 GREEN AND SUSTAINABLE TECHNOLOGY I

3 credits The course will enhance students’ ability in applying various green building technologies available and the ability to solve specific design problems by appropriate technical means, covering:

- Building Physics
- Design & Fire Engineering
- Environmental Performance
- Design Integration of Services
- Other related topics

The course will also involve precedents studies.

At the end of the course, students are able to:
1. Determine the advantages and disadvantages of conventional and ‘green’ building services.
2. Illustrate elements of green building services and building environmental control strategies to enhance the ability to design according to the concept of sustainability.
3. Analyse the applicability of green building services and building environmental control.

BAGS6110 GREEN AND SUSTAINABLE TECHNOLOGY II

3 credits This course introduces the technical definition of working drawings, Differences between design sketch analyses, discussions and applications of the sustainability concept:

- green building construction
- green building materials in green building design
- environmental impact assessments (EIA)
- green building rating methods

At the end of the course, students are able to:
1. Appraise various methods of ‘green’ building construction and the characteristics of green building materials.
2. Propose green building solutions into the studio architectural design project.
BAGS6111 PROFESSIONAL PRACTICE I

3 credits  This course introduces the:
- Concept of ethics, moral and professional obligations
- Principles of professionalism, competency, responsibilities and due diligence
- The architect’s roles and responsibilities in the building team and society
- The laws and regulations that govern the architectural profession and its practice
- The scope of architectural services and the relevant terms of appointment of an architect

This course also exposes the legislative aspects including:
- Statutory controls and their application in practice:
  - Land and property legislation;
  - Planning control – Legislation on town and country planning and its administration;
  - Building control, Building Legislation and Regulations, Local authority guidelines.

At the end of the course, students are able to:
- Determine the architect’s professional ethics and their role in the building industry.
- Relate to the architect’s scope of work, in terms of his/her ethical obligations, responsibilities, moral values that are required in the building industry.
- Explain the types of architectural services based on terms of appointment and current Malaysian legislation.

BAGS6112 PROFESSIONAL PRACTICE II

3 credits  To provide an overview of the architect’s practice as a professional business entity under the Architect Act (1967) and Rules (1996) and Scale of Minimum Fees (2010). Among the scope of discussion are:
- Types of practice
- Marketing strategies
- Financial management, fees, remuneration and expenses
- Managing work distribution and human resources

At the end of the course, students are able to:
1. Explain different types of architectural practices as professional business entities.
2. Interpret principles of marketing strategies for architectural practices.
BAGS6213 ARCHITECT AND CONSTRUCTION MANAGEMENT

3 credits Through this course, students will recognise the role and responsibility of a practicing architect during the construction management stage and the processes and procedures from award of tender to final account.

At the end of the course, students are able to:
1. Illustrate the course of a construction project from the letter of appointment of contractor to the handover of site to the project owner.
2. Apply management knowledge and tools in managing construction and work progress in accordance with the building contract.
3. Determine the role of an architect during the construction phase.
PROGRAMME ELECTIVE COURSES

BAGS6314 ARCHITECTURAL THEORY AND PHILOSOPHY
3 credits  Study on: Modernism (rationalism, structuralism, phenomenology); Post-modernism (post-structuralism, de-constructivism, critical regionalism, abstract expressionism, algorithmic design, sustainable/green design)

At the end of the course, students are able to:
1. Analyze the influence of various architectural movements of different eras, from the inception of architectural ideas and concepts to their final expressions in built form.
2. Conclude theories, philosophies and manifestos of various architects or architectural movements based on their differing characters and values.
3. Enumerate theories and philosophies of various architects or architectural movements based on their salient features.

BAGS6315 ARCHITECTURAL COMPARATIVE STUDIES
3 credits  This course introduces the students to:
the culture, site and context in architecture
design impact of the building
comparative studies between local and abroad building styles
significant cultural and social aspects
specific technical and/or environmental studies.
Students will have the opportunity to present research findings effectively and professionally.

At the end of the course, students are able to:
1. Analyze issues of culture, site and context in architecture of a site outside Malaysia and the influence of different civilisations on architecture.
2. Analyze the design of selected buildings and sites to include concept, spaces, structure, material, sustainability and uniqueness.
3. Perform the presentation of research findings effectively and professionally.
BAGS6316 BUILDING CONSERVATION

3 credits  The course introduces the students to the rigorous conservation process from the need for significant research to preparation of measured drawing, survey of building condition and defects and preparation of conservation statements. The course also introduces the principles and methods of building conservation as recommended by the UNESCO and ICOMOS, as well as Malaysian legislations that placed authenticity and integrity as the primary objectives.

At the end of the course, students are able to:
1. Indicate the principles of building conservation that emphasizes on the importance of cultural significance, authenticity and integrity of built forms.
2. Explain various forms of conservation practice in architecture, international conventions and guidelines on conservation of cultural properties and relevant existing Malaysian legislations.
3. Analyze best conservation practices related to the use of materials, techniques, approaches, philosophies, measured drawings, dilapidation surveys and conservation statements.

BAGS6317 DESIGN - BUILD PROJECT

3 credits  This course introduces the students to:
the process of design and building the real construction site
simple design, build task and familiarize with tools and trade of construction
design a usable project and the best design will be selected to be constructed
Students will also be working with builders and exposed construction technical aspect.

At the end of the course, students are able to:
1. Translate design ideas into construction detail.
2. Assemble small physical structure to 1:1 scale.
3. Appraise the performance of the built structure.
BAGS6318 URBAN PLANNING
3 credits Study on an overview of basic urban planning and design techniques; urban development policies, land use policies; housing policies, transport policies and traffic management policies and; basic city structure and form.

At the end of the course, students are able to:
1. Determine basic urban planning and design techniques.
2. Discuss basic urban planning and design policies and strategies.
3. Analyze an existing urban development area to planning and urban design theories and concepts.

BAGS6319 INTERIOR ARCHITECTURE
3 credits Synopsis of Course Contents
Study on planning and layout of interior spaces; colour theory; finishes and furniture; lighting and acoustics; M & E services; structure and; information technology applications

At the end of the course, students are able to:
1. Discuss the history, philosophy and essentials of interior architecture.
2. Apply knowledge obtained with regards to all aspects of interior design.
3. Prepare a sketch design proposal and detail design drawings for an interior space of medium complexity.

BAGS6320 LANDSCAPE ARCHITECTURE
3 credits This course provides opportunities for students to develop and demonstrate knowledge, understanding and skills in the following areas:
knowledge and understanding of landscape design
planting design
theoretical studies

At the end of the course, students are able to:
1. Criticize the qualities of landscape spaces.
2. Appraise critically landscape design works.
3. Integrate basic principles of planting design, maintenance and management in design projects.
BAGS6321 UNIVERSAL DESIGN

3 credits The students will be exposed to:
- obtain basic skills and eventually build on those skills to be Universal Design advisors or facilitators
- assist in conducting ‘access audit’ training
- do access audit reports
- appraise building plans on accessibility issues
- interview the user with special needs

At the end of the course, students are able to:
1. Investigate building plans for accessibility.
2. Apply knowledge and skills of Universal Design.
3. Propose solutions for accessible building plans.
GENERAL INFORMATION
1. MARKING SCHEME (For all coursework Masters’ programs candidate)

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2. RESEARCH METHODOLOGY (Compulsory for all full research program candidates)

(a) This course is conducted every semester (over 3 weekends from week 9 to week 11) for all postgraduate by research candidates to give them a clear know how on methods of research, the research process and all that is related to a research degree.

(b) Candidates are also required to present in a session his / her research proposal in order to pass this course.

(c) This course is prerequisite to a candidate’s chances of obtaining a research grant from the University and is one of the main requirement for the completion of the research degree

3. CANDIDATURE DEFENCE (For full research programme candidates)

(a) With effect from 1st September of the 2007/2008 session, all postgraduate by research candidates are required to present their progress report in not less than 10000 words within 20-30 minutes
excluding the question & answer (Q&A) session during their Candidature Defence session. Candidates, after discussing with their supervisor(s), are required to send to the General Office 4 copies of the said report one week prior to the session.

(b) The report should include the following: clear research question and / or objectives, literature review, research methodology, research findings, bibliography, working plans of research and list of publication (if any).

(c) Candidates under the Bright Sparks program will have to present their Candidature Defence session in the 2nd semester of their studies.

4. Thesis / Disertation Seminar
5. Viva-Voce
6. ASEAN Post Graduate Conference (APGC, UM)
FACULTY FACILITIES

LIBRARY

The University of Malaya Library established since 1962 in Kuala Lumpur is a network of 17 Libraries, fully computerized and integrated in its operation and services. The Built Environment Library is one of the special subject libraries in the University of Malaya Library network. Prior to 2003, the collections were kept in the Engineering Library, at the Faculty of Engineering. At the present location, the Built Environment Library is conveniently located for access and is open to all students during office hours. The library is manned by two full-time staff members and one senior librarian which is covers a floor space of about 300 sq. meters with seating capacity for 120 students.

The Library’s core function is to support the learning, teaching and research needs of undergraduate, postgraduate students, and the academic staff and researchers of the Faculty of Built Environment. However, it is also opened to other registered users of the University of Malaya Library network, subject to some limitation in borrowings.

The collection gives priority on the learning and teaching programme of the Built Environment Faculty especially in the areas of architecture, real estate, quantity surveying, building surveying and urban planning. The library materials include both primary and secondary sources, such as books, journals, reference books, dissertation and theses, conference proceedings and electronic resources. The library online catalogue, known as Pendeta WebPAC is a union catalogue of the University of Malaya Library network which provides access to holdings of collection of materials and can be accessed by others via the Internet.

Library Collections

• General
  The Library has a general collection of about 11,141 item consists of textbooks, reference books, and handbooks, journal, CD-ROM and etc.

• Dissertations, Theses and Academic Exercises
  This ever expanding collection consists of works produced by undergraduate and postgraduate students of the Faculty.
• **Conference Papers**
  Papers presented by the academic staff at the seminars or conferences especially held in Malaysia are continually collected and indexed in an index database known as iMalaysiana Collection.

• **Journal, Online databases and e-Books**
The Library subscribes to printed journal, online databases - mostly full text journals and e-books, which can be accessed via the campus network and remote access from individual home of registered users.

Some available online databases related to the built environment are ICONDA (International Construction Database), RIBA e-books, IEEE Xplore, Art & Architecture Complete @EBSCOHOST, Science Direct, Springer Link, etc.

**Library Services**

• **Loans, Online Renewal and Reservation**
  Most books are allowed borrowings, except the Reference and special collection such as dissertation/theses and conference proceedings. The library-computerized system allows online renewal by the individual by each patron; and also reservation of books when materials on loan to other user.

• **Discussion Area (“Ruang Bicara”)**
  This Discussion Area is located beside the library office and accommodate with 16 seats. This area is spacious and very interesting for any discussion and meeting. It is open to anyone who interested and users only need to make a reservation at counter services. Projectors are also provided for teaching and learning facilities.

• **Books Donation Corner (by Faculty Members)**
  This corner was initiated by faculty members to keep books donation as a library collection. All of these materials can be referred and borrowed.

• **Inter-library loan and Document Supply Services**
  Inter-library loan facilities and document delivery services are available for postgraduate students, researchers and academic staff of the Faculty of Built Environment. Requests to these services are facilitated via the Library interactive portal, which can be submitted to the Library management electronically. A special budget is allocated for this purpose with deposit accounts established at the British Library (U.K) and National University of Singapore (Singapore).
• **Access to Other Resource Centres in Malaysia**
Registered students and academic staff of the University Malaya are allowed to visit and use (for reference only) other academic / public university libraries in Malaysia, as a part of the resource sharing programme.

• **Information Literacy (GIG1004)**
Besides that, the library conducts a formal compulsory course for first year undergraduate called Information Literacy (GIG1004) to equip them with the skills on information retrieval and access to resources.

• **User Education Session**
The postgraduate students, academic staff and researchers of the Faculty are given special user education session; to cater for information needs at a regular basis to familiarize them with the use of library resources and library catalogue (Pendeta WebPAC), Endnote Management Software and online databases subscribed.

• **Reference and Information Enquiries**
A librarian will assist and guide users with searching information for the collection, online database subscribed, internet or from other institutions. For further information do contact Puan Hanani Fauzi at 03-79676802 or email at hananif@um.edu.my

• **Opening Hours**

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<tr>
<td><strong>Monday - Friday</strong></td>
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**FACILITIES**

• **Self-Photocopying Machines**
Photocopying services operated by commercial contractors are provided in the Library and cards can be purchased at the Service Counter.

• **Computers (PC)**
Computers with Internet connections are provided for use in the Library for searching information from Library resources and other online databases subscribed by the Library.
• **Student Centre**
  Located at Level 3, Mercu Alam Bina was designed to give students space for study and relaxation between classes.

• **Surau/Musolla (Praying Room)**
  Located at the second floor of Mercu Alam Bina for both male and female.

• **WIFI**
  Access is available within the building with a number of access points.

• **Vending Machines**
  Available on selected floors.

• **Centralised and Special Computer Laboratories**
  The general computer laboratory is a centralised facility for all students of the Faculty. The facilities include desktop publishing and image editing. The special computer laboratory is for teaching purposes that include facilities for 2D draughting, 3D modelling and simulation. All the computers are networked within the Faculty’s area network and are linked to the Internet.

• **Centralised Workshop**
  A Model-Making Workshop that has 100m² floor area is available for students to make architecture models and construct small-scale objects. The workshop, equipped with hand and power tools for model-making with wood, plastics and metal, is open during normal working hours for use by all students of the faculty. Some equipment are available for loan outside operating hours. One full-time technician supervises the workshop activities and provides hand-on training and assistance to students.

• **Centralised Laboratories**
  There are three centralized laboratories within the Faculty buildings that support the lecturers and students in teaching and research activities. These are Physics, Building Laboratories and Digital Crafting Lab. The labs offer advanced practical, research and model-making facilities with state-of-the-art machines and equipment, under the supervision of experienced academic and technical staff.

In addition, students have access to more specialized laboratories in Engineering and Science Faculties.
• **Cafe**
The faculty’s café is located at level 3 and is open during office hours on weekdays.
MISCELLANEOUS INFORMATION

(1) All Postgraduate Candidates should adhere to the following where and when necessary:-

(a) University of Malaya (Degree of Doctor of Philosophy) Rules and Regulations 2017
(b) University of Malaya (Master Degree) Rules and Regulations 2014
(c) University of Malaya (Discipline of Students) Rules 1999
(d) Any other rules & regulations of the University

(2) You may refer to the following for more information on our program(s) and / or miscellaneous matters pertaining to your candidacy:-

(a) http://fbe.um.edu.my
(b) https://um.edu.my/

(3) Important Contacts and reference person:-

Deputy Dean (Higher Degree)       Program Coordinator
Tel: 603- 7967 6880 / 5320 / 6899      Master of Project Management
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