**Department of Architecture**

**School of Architecture and planning**

**University of Management and technology**

**Course Outline**

Course code: **AR-610** Course title: **Construction Management and Project Scheduling**

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| Program | **M-Arch** |
| Credit Hours | 3+0 |
| Duration | 1 semester(16 weeks) |
| Prerequisites | N/A |
| Resource Person | **As per timetable** |
| Counseling Timing  (Room# ) | **Kindly see office window** |
| Contact: | - |

**Chairman/Director signature………………………………….**

**Dean’s signature…………………………… Date………………………………………….**

**Learning Objective:**

Project Management is the management of construction projects that require the knowledge of modern management skills, tools and understanding the overall construction process.

The course covers Construction management from concept phase through move in, including budgeting and cost estimating, the tendering and delivery process, programming and space planning, selecting the design team, managing construction and occupancy. Techniques for cost analysis, scheduling and procedures contracting, construction, construction coordination, and the control of change orders are reviewed. The impact of scheduling on contractor claims is studied, along with management reporting and feedback. To further add to that, the course provides an overview of different construction contracts. . Emphasis is on management of the process, rather than technical aspects. Viewpoint is that of the facility manager of project manager, responsible for on-time, within budget completion.

**Learning Methodology:**

Construction Projects have a specific set of goals and objectives. Accomplishing the project goal and /or fulfilling the project’s mission require a delicate balance time, quality and affordability. This class teaches the techniques to recognize, organize and demonstrate project management competency.

Study of basic concepts of Project Management from inception to execution and delivery of the project, preparation of CPM. PERT (Program Evaluation and Review Technique) to monitor progress quality and cost. Study of the risks and other unforeseen aspect including legal, social and financial study for various computers soft wares designed for project management such Primavera, project planner.

List of topics to be covered, in lectures, including the list of necessary resource books, is carefully formulated and listed below. Guest lectures by experts and site visit to under construction projects will be essential part of the teaching methodology.

Criteria for the distribution of marks to evaluate final grade in a semester.

**Marks Evaluation Marks in percentage**

Quizzes 10

Assignments 15

Mid Term 25

Final exam 50

Total: 100

**Recommended Text Books:**

Nil

**Reference Books:**

* The Project Resource Manual: CSI Manual of Practice, Firth Edition, (The Construction Specifications Institute).
* Construction Project Management by S. Keokie Sears
* Successful Construction Project Management: The practical guide , by Paul Netscher
* PEPRA Website.
* LEED (PAKGBC), website.
* Construction Management Jump Start: The best first step towards a career, by Barbra J. Jackson
* Construction Project Management: A complete Introduction by Alison Dykstra
* PEC Website.

**Calendar of Course contents to be covered during semester**

Course code**: AR-610,** Course title**: Construction Management**

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| **Week** | **Course Contents** | **CLO** | **Reference** |
| 1 | Introduction to the Course outline, general requirements, importance of subject, and overall criteria and history. | C1 |  |
| 2 | Procedure for bidding and selection of a contractor | C1 |  |
| 3 | **The Project Management team:**   1. Owners. 2. Developers. 3. Designers (Architects, Interior designers and town planners). 4. Builders. 5. Construction managers/ Project Managers. 6. Suppliers and Subcontractors. 7. Lenders and Investors. (Financial Institution). 8. Insurers and sureties. | C2 |  |
| 4 | **Site Management Program:**   1. Assignment of responsibility. 2. Hazard identification and control. 3. Training and communication. 4. Documentation and enforcement of safety rules. 5. Establishing safety performance objectives for all levels of management. 6. Safety as part of management, performance reviews.   Measuring effectiveness of HSE, and site safety program. | C4 |  |
| 5 | Key terms in the Construction Project Management industry used throughout the world. | C2 |  |
| 6 | Construction contracts laws and claims  PEC Requirements/handbook and practices in Pakistan | **C5** |  |
| 7 | **Construction Cost Analysis:** review of cost estimate, significance, strategies with market analysis. | C5 |  |
| 8 | **Mid-Term Exam** |  |  |
| 9 | **Planning Construction Manpower**:  Corporate Human resource (HR) management covers a wide spectrum of functions. These include forecasting needs, formulation of pays scales and service conditions, recruitment and induction, training and development, morale and motivation, health and welfare. Safety and security, and maintenance of harmonious industrial relations.  The lecture will cover the scope of construction manpower planning, and things related to it such as:  1) Establishing workers’ productivity standards.  2) Scheduling Construction Site workers.  3) Grouping Project Manpower.  4) Designing workers financial incentive schemes.  The project construction manpower planning is primarily concerned with estimating the worker's productivity, scheduling manpower employment, and structuring it onto workers teams and work groups with a view to economically match manpower supply with the task requirements.  Also the difference between direct and indirect workers and how they are scheduled in a construction project. | C3 |  |

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| 10 | executing various tasks; it describes the approach generally followed for assessing the ideal output of the equipment.  The main areas to be covered in the lecture | C3 |  |
| 11 | **Construction Management soft- wares** |  |  |
| 12 | Project Risk Management | C5 |  |
| 13 | Estimation and Quantity surveying | C5 |  |
| 14 | Site Visit to an under construction commercial building to review a project in process. | C5 | **Site Visit** |
| 15 | Guest Lecture |  |  |
| 16 | **Final Exam** |  |  |