| Subject Code | CSE20359 | | | | | | |
|-------------------|---|--|--|--|--|--|--|
| Subject Title | Contracts, Specifications, Quantities and Organization | | | | | | |
| Credit Value | 3 | | | | | | |
| Level | 2 | | | | | | |
| Pre-requisite / | Nil | | | | | | |
| Co-requisite/ | | | | | | | |
| Exclusion | | | | | | | |
| Objectives | (1) To enable students to acquire basic knowledge of construction | | | | | | |
| | management to ensure quality and timely completion of civil | | | | | | |
| | engineering projects; | | | | | | |
| | (2) To equip students with basic principles in contract management; | | | | | | |
| | (3) To enable students to apply analytical and mathematical | | | | | | |
| | techniques for project management. | | | | | | |
| Intended Learning | Upon completion of the subject, students will be able to: | | | | | | |
| Outcomes | a. apply the basic organisation concepts and construction | | | | | | |
| | management approaches to generate practical and effective | | | | | | |
| | solutions in construction projects while meeting the technical | | | | | | |
| | requirements and quality standards; | | | | | | |
| | b. understand the implications of various construction contracts and | | | | | | |
| | specifications together with their applications in practice; | | | | | | |
| | c. analyse systemically construction activities for determination of | | | | | | |
| | critical path and project duration; | | | | | | |
| | d. utilize the mathematical techniques and computer tools necessary | | | | | | |
| | for project management in confronting complexities and | | | | | | |
| | uncertainties in managing construction projects; | | | | | | |
| | e. develop quantitative analysis skills, English proficiency, | | | | | | |
| | communication ability and work ethics as needed for a | | | | | | |
| | construction management career. | | | | | | |
| Subject Synopsis/ | 1. <u>Introduction and Organisation</u> (3 weeks) | | | | | | |
| Indicative | Principles of organisational structures; Contractor's and Resident | | | | | | |
| Syllabus | Engineer's site organisation; Contractor's and Engineer's head | | | | | | |
| | office organization. | | | | | | |
| | 2. <u>Construction Management (3 weeks)</u> | | | | | | |
| | Early tasks of construction work; site records; interim and final | | | | | | |
| | payments; programmes and progress charts; safety management | | | | | | |
| | in construction. | | | | | | |
| | 2 Contracts (2 | | | | | | |
| | 3. Contracts (2 weeks) | | | | | | |
| | Contract documentation; types of contract; main contract, sub- | | | | | | |
| | contracts; estimating and tendering procedures. | | | | | | |
| | 4. <u>Specifications and Quantities</u> (2 weeks) | | | | | | |
| | Function, types of specification; General Specification for Civil | | | | | | |
| | Engineering Works. Standard Method of Measurement for Civil | | | | | | |
| | Engineering Works; various types of bill of quantities; function and | | | | | | |
| | procedures in preparing bills of quantities; taking off, abstracting, | | | | | | |
| | billing; worked examples of typical civil engineering construction. | | | | | | |
| | 5. Critical Path Analysis (3 weeks) | | | | | | |
| | 5. CHICAI I ANI I HICLIAND (5 WOOKS) | | | | | | |

| Introduction to graphical representation of construction schedules, use of CPM/PERT as a tool for planning and scheduling, and use of linear scheduling technique as a tool for planning and scheduling. | | | | | | |
|---|--|---|--|---|--|--|
| Fundamental knowledge will be covered in lectures. Tutorials will provide opportunities for discussion of lecture materials and will also be conducted in the form of examples and class problem-solving session to supplement understanding from lectures. | | | | | | |
| Specific assessment methods/tasks | % weighting | Intended subject learning outcomes to be assessed | | | | |
| 1. Assignments and test | 30 | a ✓ | b ✓ | c ✓ | d ✓ | e ✓ |
| 2. Final Examination Total | 70 100 | ✓ | ✓ | ✓ | ✓ | √ |
| Students must attain at least grade D in both coursework and final examination (whenever applicable) in order to attain a passing grade in the overall result. Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes: The students will be assessed with three components, i.e., the tutorial session and assignment, a mid-term test and a final examination at the end of the semester. The students will be required to attend tutorial sessions and submit in-class assignments. These tutorial sessions will enable students to acquire basic techniques and problem solving. The works in the tutorial sessions are closely related to construction management for civil engineering projects. Students will have to exert engineering judgments to complete the tutorial sessions. The tutorial sessions to together with the take-home assignments are best to achieve intended learning outcomes a to e The mid-term test will emphasize on assessing students' basic concept and current practices of construction management. It is appropriate to achieve intended learning outcomes a to c. The final examination will consolidate students' learning in lectures and tutorials. It is most appropriate to achieve the intended learning outcomes a to e. | | | | | | |
| Class aget et: | | A | vera | ge hou | irs per | week |
| | | | | | | 2 11 |
| | | | | | | 3 Hrs. |
| - | | | | | | 3 Hrs. |
| | ments | | | | | 3 Hrs. |
| Total student study effort | | | | | | 9 Hrs. |
| | schedules, use of C scheduling, and use of planning and schedul. Fundamental knowledge w provide opportunities for d be conducted in the form session to supplement under Specific assessment methods/tasks 1. Assignments and test 2. Final Examination Total Students must attain at le examination (whenever a grade in the overall result Explanation of the appro- assessing the intended learn The students will be assess session and assignment, a r end of the semester. 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The final students' learning in lectures and tutoachieve the intended learning outcome. Class contact: Lectures/ Tutorials Other student study effort: Reading and studying Completion of Assignments | schedules, use of CPM/PERT as a scheduling, and use of linear scheduling planning and scheduling. Fundamental knowledge will be covered in provide opportunities for discussion of lectube conducted in the form of examples at session to supplement understanding from lessession and lessession from lessession and lessession from lessession and lessession and learning outcomes: The students will be assessed with three consession and assignment, a mid-term test and end of the semester. The students will be assession and end of the semester. The students will be ressions and submit in-class assignments. Tenable students to acquire basic techniques works in the tutorial sessions are closely management for civil engineering projects exert engineering judgments to complete tutorial sessions to together with the take-hoto achieve intended learning outcomes a to emphasize on assessing students' basic comof construction management. It is approprietarning outcomes a to c. The final example achieve the intended learning outcomes a to emphasize on assessing students basic comof construction management. It is approprietarning outcomes a to c. The final example achieve the intended learning outcomes a to emphasize on assessing students basic comof construction management. It is approprietarning outcomes a to c. The final example achieve the intended learning outcomes a to c. The final example achieve the intended learning outcomes a to c. The final example achieve the intended learning outcomes a to c. The final example achieve the intended learning outcomes a to c. The final example achieve the intended learning outcomes and tutorials. A | schedules, use of CPM/PERT as a too scheduling, and use of linear scheduling tee planning and scheduling. Fundamental knowledge will be covered in lecture provide opportunities for discussion of lecture must be conducted in the form of examples and classion to supplement understanding from lectures. Specific assessment weighting outcome a because weighting outcome. Specific assessment weighting outcome. I. Assignments and test 30 | schedules, use of CPM/PERT as a tool for scheduling, and use of linear scheduling technique planning and scheduling. Fundamental knowledge will be covered in lectures. provide opportunities for discussion of lecture materials be conducted in the form of examples and class prosession to supplement understanding from lectures. Specific assessment | schedules, use of CPM/PERT as a tool for plannis scheduling, and use of linear scheduling technique as a planning and scheduling. Fundamental knowledge will be covered in lectures. Tutoriprovide opportunities for discussion of lecture materials and whe conducted in the form of examples and class problemsession to supplement understanding from lectures. Specific assessment |

| Read | ling I | List | and |
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| Refe | renc | es | |

Essential Textbooks

Tang, S.L., Poon, S.W., Ahmed, S.M. and Wong, K.W., *Modern Construction Project Management*, Hong Kong University Press, Hong Kong, 2003.

Hong Kong Government, Standard Method of Measurement for Civil Engineering Works, 1992.

Seeley, I.H., Civil Engineering Quantities, 4th edition, 1987, McMillian.

Hong Kong Government, General Specification for Civil Engineering Works, 1992.

Seeley, I.H., Civil *Engineering Contract Administration and Control*, 2nd Edition, 1993 McMillian.

Reference Textbooks

Pilcher, R. *Principles of Construction Management*, 3rd Edition, 1992 McGraw-Hill International (UK) Ltd.

Smith, N.J. Engineering *Project Management*, 1995, Blackwell Science.