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| CE5251 | Project Management I | Credits: 3.0 | CE5252 | Project Management II | Credits: 3.0 |
| Project Management Framework: Project Management Context, Project Management Process, Introduction to Project Management. Project Integration Management: Project plan development, Project plan execution, Overall change control. Project Scope Management: Initiation, Scope planning, Scope definition, Scope verification, scope change control. Project Time Management: Activity definition, Activity sequencing, Activity duration estimation, Schedule development, Schedule control, Introduction to computer software (MS Project). Project Cost Management: Resource planning, Cost estimating, Cost budgeting and Cost controlling. | Project Quality Management: Quality planning, Quality assurance and Quality control. Project Communication Management: Communication planning, Information distribution, Performance reporting and Administrative closure. Project Risk Management: Risk identification, Risk quantification, Risk response development and Risk response control. Project Human Resource Management and Project Procurement Management. Project Management Information Systems |
| CE5253 | Management Information Systems | Credits: 3.0 | CE5254 | Procurement Management and Law | Credits: 3.0 |
| Organizations, management, and the networked enterprise: Aspects of managing digital firm, information systems in enterprise, information systems, organizations, management and strategy, The Digital firm: Electronic business.Information Technology Infrastructure: Managing hardware and software assets, Managing data resources, Telecommunications and networks, the internet and new information technology infrastructure.Building Information systems in the digital firm: Redesigning the organizations with information systems, Understanding the business value of systems and managing change.Managing and organizational support systems for the digital firm: Managing knowledge and Enhancing management decision making.Managing information systems in the digital firm: Information systems security and control, Ethical and social impact of information systems, managing international information systems. | General Principles of Law: Sources of Law and Legal System in Sri Lanka, Courts. Law of Contract: General Principles of Contract Law, Formation of Contract, Offer and Acceptance, Remedies and Breach of Contract, Law. Industrial law and law related industrial safety.Form of contracts (ICTAD), types of contracts and procurement methods, and. Evaluation of ICTAD conditions with respect to the NPA guideline. Conditions of contracts — important areas: General obligations; Materials and workmanship; Commencement time and delays: Alteration, additions and omissions; Measurement, certificates and payment: Nominated sub-contractors: remedies; Conditions of particular applications. Construction claims: Types of claims, claim situations, claim clauses; Claim procedure, Claim presentation; Arbitration procedure. Practice of Building and Engineering Contracts, Settlement of Disputes and Arbitration Procedures. |
| CE5255 | Human Resource Management | Credits: 3.0 | C25256 | Project Management Applications | Credits: 3.0 |
| Organization Structure: Organization Structure and Relationship, Classical approach, Human relations approach, System approach.Individual in Organization: Self-awareness, Attitudes and values, Interpersonal skills, incompatibilities, Managing personal stress.Communication and Problem Solving in Organizations: Supportive communication, Supportive listening, Creative problem solving.Groups in Organizations: Group behavior, Group formation, Types of groups, Managing Groups, Conducting effective groups meeting.Performance and change in Organizations: Ability. Motivation, improving employee performance through motivation, implementing change, Managing change.Leadership and Delegation in organizations: Approaches to leadership, Delegation.Personnel and Conflict Management in Organizations: Personnel Management, Managing Conflict, Initiator, Respondent, Mediator Role.Building the Team: Forming, Norming, Storming, Performing. | New methods of Project management – Agile project management, Prince 2 and other methods. Introduction to Project Management Institution and professional qualifications related to Project Management. Additional standards of Project Management Institutions such Safety related to construction industry.Project Management Systems such as Primavera, MS Project Server and Enterprise Resource Planning Systems (ERP). |
| CE5257 | Construction Management | Credits: 3.0 | CE5258 | Financial Management | Credits: 3.0 |
| Work Study – Method study and work measurement. Activity sampling. Incentives – Motivation theories, Principles of inventive scheme. Cash flow forecast and cost control.Equipment management- Equipment selection, hire rates, production outputs.ICTAD specifications and construction methods.Construction company organization and site management. Estimating and Tendering – Material, labour and equipment rates, subcontract management and competitive bidding. Computer Aided Estimating. | Introduction to Financial accounting concepts. Capital Employment: Combination of long- and short-term funds, Sources and cost of capital, Capital gearing, stock market and unlisted securities market.Working Capital Management: Working capital requirements, Relationships between working and fixed capital, Cash management, Management of stocks and debtors. Company and personal taxation Financial Investment Appraisal: Cash flow forecasting for discrete and continuous cash flows, Comparison of alternatives using net present worth (value), annual worth, rate of return analysis, Analysis of alternatives, Total project cost, Effects of inflation, Interest and tax, Sensitivity analysis, Risk analysis.Company analysis: Financial statements, Analysis of company performance.Computer aided Financial Management Systems. |
| CE5259 | Economics Development and Finance | Credits: 2.0 | CE5260 | Communications Skill Development | Credits: 2.0 |
| Theory of development finance in the context of real estate development and the financial market.Financial players in the market and their financial management strategies and risk management techniques. Capital for developer thorough private debt, public debt, private equity and public equity and their finance.Economic Appraisal: Market prices, Shadow prices, Economic analysis.Aspects related to setting of a new construction company | Effective Writing: technical report writing, business report writing, letter writing, academic writing etc.Effective Presentation: Communication in committees, Communication to an audience with audio visual aids such as multimedia projector.ICTAD Construction Management Communication formats for a construction project.IT related communication methods such emails, blogs, group systems such as drop box, SharePoint server. In depth training on MS PowerPoint. |
| CE5261 | Quantitative Techniques & Research Methodology | Credits: 3.0 | CE5262 | Research Project | Credits: 2.0 |
| Statistics: Statistical Problems in Business and Economics, Descriptive and Inferential Statistics, Parts of a Statistical Problem. Risk and Decision-making: Expected Utility, Utility Functions and Risk, Reducing Risk Continuous Probability Distributions: The Normal Distribution: Properties of Normal Distribution, Using the Normal Distribution. Sampling: Population vs. Random Sample: Selection Bias, Non-response Bias. The Central Limit Theorem. Types and Hypothesis TestingSimulating the F Distribution Introduction to Regression Analysis: Single and Multiple Regression Model.Research methodologies: primary and secondary data collection. Structured and semi-structured interviews. The design and use of questionnaires. Analysis of quantitative and qualitative data. Literature search and review. Writing up: structure and style of dissertations. | Analyse an industry problem with scientific validation and present results with a presentation and a report. |
| CE5271 | Advanced Methods in Building Construction | Credits: 3.0 | CE5272 | Road and Bridge Engineering | Credits: 3.0 |
| Tall building construction – Formwork methods, material storage and transportation. Design aspects of tall buildings. Facilities construction of tall buildings, lifts, central air-conditioning. Use of new materials in buildingsHealth and safety related to tall building constructionGreen buildings design and construction. | Different construction materials used in roads and bridge construction. Different pavement types and pavement mix design. Latest technology in pavement surface construction. Alternative road construction, gravel and earth Roads, concrete roads, design and construction techniques, pavement maintenance and management and also the methods in bridge construction. |
| CE5273 | Building Services and Asset Management | Credits: 3.0 | CE 5274 | Sustainable Design and Construction | Credits: 3.0 |
| The needs of the occupants, design and construction of the appropriate services. Technological fundamentals of various services installations. Measurement of building services, energy auditing and value management. Appliances, Water supply, above and below ground water disposal and drainage. HVAC, electrical installation, fire safety, security, communication and computer networking, integration of services within the building structure and the fabric. Building Management Systems for efficient and economical operation and promotion of maintainability within the building services. Asset Management: Maintenance planning, management, and evaluation. Maintenance planning, management and designing an effective maintenance organization. Information systems organization and asset management. Evaluating maintenance performance. cost-benefit analysis. | The knowledge on architectural, structural, renewable energy and sustainability aspects, inculcating an appreciation of the role played by the built environment in sustainable development by encouraging energy efficiency and resource optimization in the built environment. Students will also be able to familiarize the standards with the certification protocols that ensure sustainability of a built environment. The construction waste management and related aspects. The trends of green building research and applications. The requirements of Green Buildings, the already constructed green buildings and performance in Sri Lanka. |
| CE5275 | Climate Change and Disaster Management | Credits: 3.0 | CE5276 | Industrial and Commercial Law | Credits: 3.0 |
| The climate change, the world main problem and its main aspects. The research and trends of climate change and its relevance to construction. Various agreements on climate change and current situation. The world cities and pressing challenges for planning, design and construction. The aspects of disaster situations and special aspects of post disaster projects. Emergency projects and medium-term disaster recovery projects. Special aspects such as resource assessment, cost estimating, cost controlling and cost management, risk assessment in post disaster situations and quality assurance in disaster recovery projects. | General Principles of Law: Sources of Law and Legal System in Sri Lanka, Courts’. Structure and Procedure, Administrative Tribunals and their scope - power - excesses - remedies - Judicial Review of Administrative decisions. Law of Tort: Nature of Delictual Liability: trespass, nuisance, negligence, breach of statutory duties, Occupier’s Liability; Professional Responsibilities and Liabilities.Law of Contract, Company Law and Commercial Law: Company Law, companies Act and legal obligations. Industrial Law, Commercial law and labour laws. |