



National University of Engineering (UNI)
School of Civil Engineering
Syllabus 2027-I

1. COURSE

CE2C8. Business Management in Construction I (Mandatory)

2. GENERAL INFORMATION

2.1 Course	: CE2C8. Business Management in Construction I
2.2 Semester	: 8 th Semester.
2.3 Credits	: 3
2.4 Hours	: 4 HT; 2 HP;
2.5 Duration of the period	: 16 weeks
2.6 Type of course	: Mandatory
2.7 Learning modality	: Face to face
2.8 Prerequisites	: BEC101. General Economics. (1 st Sem)

3. PROFESSORS

Meetings after coordination with the professor

4. INTRODUCTION TO THE COURSE

Business Management in Construction I applies the fundamentals of business administration – contract law, project finance, cost accounting, entrepreneurship, marketing, labor regulation, and managerial decision-making – to the specific problem of running a construction company. Building on the introductory organizational and operational concepts covered in Organization and Business Management, this course equips the future civil engineer to negotiate and manage construction contracts, evaluate the financial viability of projects and control their costs, structure and market a construction business, comply with labor regulation, and make sound managerial decisions under the risk and uncertainty typical of the construction sector.

5. GOALS

- Analyze the formation, terms, breach, and remedies of construction contracts.
- Apply capital budgeting techniques to evaluate the financial viability of construction investment projects.
- Apply cost-volume-profit analysis, budgeting, and variance analysis to control the costs of a construction company.
- Design and validate the business model of a construction company using the Business Model Canvas and customer discovery techniques.
- Design a digital marketing strategy for construction services.
- Explain the employment-law and regulatory-compliance obligations of a construction employer.
- Apply managerial decision-making models under risk and uncertainty to construction management problems.

6. COMPETENCES

- ABET-1)** An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. (Usage)
- ABET-2)** An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. (Usage)
- ABET-6)** An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. (Usage)

7. TOPICS

Unit 1: Contract Law and Business Transactions (14 hours)	
Competences Expected: ABET-1	
Topics	Learning Outcomes
• Elements of a valid contract: offer, acceptance, consideration, capacity, and legality • Express and implied terms, exclusion clauses, misrepresentation, and frustration of contracts • Breach of contract: types, consequences, and remedies (damages, specific performance, rescission) • E-contracts and digital signatures: legal validity, electronic signature laws (eIDAS, ESIGN), and click-wrap and browse-wrap agreements	• Identify the essential elements of a legally binding contract and the circumstances that render contracts void or voidable [Familiarity] • Apply contract law principles to analyze the legal enforceability of a business agreement [Usage] • Evaluate contractual remedies available in a given breach scenario and recommend appropriate legal action [Assessment]
Readings : [Clarkson2021]	

Unit 2: Capital Budgeting and Investment Decisions (12 hours)	
Competences Expected: ABET-2	
Topics	Learning Outcomes
• Net present value (NPV), internal rate of return (IRR), modified IRR, and their decision rules • Payback period, discounted payback, and profitability index as capital budgeting criteria • Sensitivity analysis, scenario analysis, Monte Carlo simulation, and break-even analysis in capital projects • Real options in capital investment: option to expand, abandon, or defer; recognizing strategic flexibility in project valuation	• Explain the NPV rule and its superiority over alternative capital budgeting criteria [Familiarity] • Calculate NPV and IRR for a capital project and apply decision rules [Usage] • Evaluate a capital investment proposal under uncertainty using sensitivity and scenario analysis [Assessment]
Readings : [Brealey2020]	

Unit 3: Managerial Accounting and Cost Analysis (12 hours)	
Competences Expected: ABET-6	
Topics	Learning Outcomes
• Cost classification: fixed vs. variable, direct vs. indirect, product vs. period, and relevant costs for decisions • CVP analysis: break-even point, contribution margin, margin of safety, and operating leverage • Master budgets, flexible budgets, standard costing, and variance analysis (price and efficiency variances) • Activity-based costing (ABC): cost drivers, activity pools, overhead allocation accuracy, and ABC versus traditional costing	• Identify different types of costs and explain their relevance for managerial decision-making [Familiarity] • Calculate break-even point, contribution margin, and budget variances for a business unit [Usage] • Evaluate a business unit's performance using variance analysis and flexible budgets [Assessment]
Readings : [Garrison2021]	

Unit 4: Business Model Design and Validation (12 hours)	
Competences Expected: ABET-2	
Topics	Learning Outcomes
• Business Model Canvas: nine building blocks (customer segments, value propositions, channels, revenue streams, key resources, key activities, key partnerships, cost structure) • Customer discovery and validation: problem interviews, solution interviews, and pivot vs. persevere decisions • Minimum viable product (MVP): design principles, lean experimentation, and build-measure-learn feedback loop • Platform business models and network effects: multi-sided platforms, winner-take-all dynamics, and monetization strategies for digital platforms	• Describe the components of the Business Model Canvas and explain how they interact to create and deliver value [Familiarity] • Design a business model canvas for a new venture idea and identify key assumptions to test [Usage] • Evaluate a startup's business model for internal consistency and market viability [Assessment]
Readings : [Osterwalder2010]	

Unit 5: Digital Marketing (10 hours)	
Competences Expected: ABET-1	
Topics	Learning Outcomes
• SEO, SEM, and social media marketing: platforms, algorithms, organic vs. paid reach, and community management • Content marketing strategy: content types, editorial calendars, storytelling, and inbound marketing • Digital analytics: web metrics, conversion funnels, A/B testing, and data-driven campaign optimization • Email marketing and marketing automation: segmentation, drip campaigns, lead nurturing, CRM integration, and deliverability metrics	• Describe the key digital marketing channels and the metrics used to measure their effectiveness [Familiarity] • Develop a digital marketing plan including channel selection, content strategy, and KPI definition [Usage] • Evaluate the ROI of a digital marketing campaign using analytics data [Assessment]
Readings : [Chaffey2019]	

Unit 6: Regulatory Compliance and Employment Law (12 hours)	
Competences Expected: ABET-1	
Topics	Learning Outcomes
• Antitrust and competition law: prohibited agreements, abuse of dominance, merger control, and enforcement • Data protection regulation: GDPR principles, data subject rights, controller/processor responsibilities, and breach notification • Employment law: contract of employment, wrongful dismissal, discrimination, health and safety, and collective bargaining • Consumer protection law: unfair commercial practices, product liability, warranty obligations, and redress mechanisms for consumers	• Identify the major regulatory frameworks affecting business operations in key domains (competition, data, employment) [Familiarity] • Apply data privacy and employment law principles to analyze a business compliance scenario [Usage] • Design a compliance management framework for a specific regulatory area faced by a business [Assessment]
Readings : [Clarkson2021]	

Unit 7: Managerial Decision-Making (12 hours)	
Competences Expected: ABET-2	
Topics	Learning Outcomes
• Rational decision-making model vs. bounded rationality; satisficing and heuristics in managerial decisions • Decision-making under risk and uncertainty: expected value, decision trees, and sensitivity analysis • Common cognitive biases (anchoring, overconfidence, availability heuristic) and debiasing strategies • Group decision-making techniques: Delphi method, nominal group technique, brainstorming, and consensus building processes	• Describe the rational model of decision-making and its limitations under bounded rationality [Familiarity] • Construct a decision tree and calculate expected values to support a managerial decision under risk [Usage] • Evaluate how cognitive biases distort managerial decisions and recommend debiasing interventions [Assessment]
Readings : [Robbins2017]	

8. WORKPLAN

8.1 Methodology

Individual and team participation is encouraged to present their ideas, motivating them with additional points in the different stages of the course evaluation.

8.2 Theory Sessions

The theory sessions are held in master classes with activities including active learning and roleplay to allow students to internalize the concepts.

8.3 Practical Sessions

The practical sessions are held in class where a series of exercises and/or practical concepts are developed through problem solving, problem solving, specific exercises and/or in application contexts.

9. EVALUATION SYSTEM

***** EVALUATION MISSING *****

10. BASIC BIBLIOGRAPHY