# Fifth level

## Courses Specifications

## First Semester (Fall)

| No. | Code | Course Name | Instructor |
|---|---|---|---|
| 1 | BASE307 | Contracts, Bids& Liabilities | Dr: Ashraf Abdelkhalek |
| 2 | BASE402 | Feasibility studies | Dr:Mohamed Badway |
| 3 | CVEE206 | Civil Engineering cost Analysis & Project | Dr:Mohamed Badwey |
| 4 | CVEE311 | Highway Design | Dr:Hala Hashim |
| 5 | CVEE330 | Advanced steel Structural Analysis | Dr:Mona Fawzey |
| 6 | CVEE402 | Methods& Equipment for Construction1 | Dr:Hala Hashim |
| 7 | CVEE490 | Senior project 1 | Dr :Mohamed badway |

**1-BASE307 Contracts, Bids& Liabilities:**

# Course Specification

| Course Code: | Course Name: |
|---|---|
| BASE 307 | Contracts, Bids & Liabilities |

## A- Affiliation

| | |
|---|---|
| **Relevant program:** | Civil Engineering program |
| **Department offering the program:** | Civil Engineering program |
| **Department offering the course:** | Basic Science |
| **Date of program operation:** | 2008 -2009 |
| **Date of approval from the Higher Ministry of education** | 27/1/2008 |
| **Date of course operation** | 2023-2024 |

## B-Basic Information

| | |
|---|---|
| **Title** | **Contracts, Bids & Liabilities** |
| **Code** | **BASE 307** |
| **Credit Hours** | **2** |
| **Lectures** | **2** |
| **Tutorial** | **0** |
| **practical** | **0** |
| **Total** | **2** |
| **Prerequisite** | **None** |
| **Instructor Name/Email** | Dr.Ashraf Abdelkhalek Mostafa<br>**Ashref.abdel.khalek@sva.edu.eg** |

# C- Professional Information

## 1-Course Core

Contract definition, formation principles of a contract, performance or breach of contract obligations, termination of agreements, types of construction contracts and legal implications, specifications, legal organizational structures (agency, proprietorship, partnership, corporation).

| 2-Course Learning Objectives: ( oc ) | |
|---|---|
| oc1 | This course presents basic principles of contracts, bids & liabilities. |
| oc2 | Learn to execute projects considering time, cost & quality . |
| oc3 | Learn how to monitor and control projects. |
| oc4 | Learn skills to issuing contracts. |
| oc5 | Acquire professional knowledge of quantities estimation |
| oc6 | Applications of basic principles of project management. |

| 3- Program Objectives Served by the Course: ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |
| O5 | Conduct professional research that solves civil problems. |
| O6 | Professional development based on self-learning and continuous learning. |

| 4- The Relation Between Course Objectives and Program Objectives | |
|---|---|
| oc 1 | O2 |
| oc 2 | O4,O6 |
| oc 3 | O6,O2 |
| oc 4 | O6 |
| oc 5 | O1 |
| oc 6 | O5 |

| 5- Program competencies served by the course: | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO5 | Display global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development. |
| LO13 | Classify the constraints of: project financing, project management, cost control and methods of project delivery. |
| LO19 | Apply engineering design processes to produce cost-effective solutions that meet specified needs. |
| LO28 | integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery. |
| LO31 | Use creative, innovative and flexible thinking. |
| LO32 | Acquire entrepreneurial and leadership skills to anticipate and respond to new situations. |

| 6- Learning outcomes of the course (Los) | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Know quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues. |
| Lo2 | Identify business and management principles relevant to engineering. |
| Lo3 | Assess risks, and take appropriate steps to manage those risks |
| Lo4 | Implement comprehensive engineering knowledge and understanding and intellectual skills in projects |
| Lo5 | Prepare and present technical material. |
| Lo6 | Demonstrate basic organizational and project management skills. |

| 7- The relation between the course learning outcomes and the program competencies: | | |
|---|---|---|
| **Pprogram Competencies** | | **Course (Los)** |
| **1** | LO5,LO19 | Lo1 |
| **2** | LO13,LO28 | Lo2 |
| **3** | LO31,LO32 | Lo3 |
| **4** | LO13 | Lo4 |
| **5** | LO28 | Lo5 |
| **6** | LO31,LO32 | Lo6 |

## 8- Course Content and their to the course Los

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | LOs |
|---|---|---|---|---|---|
| 1 | Contracts definitions – Formatting and types – | 2 | | 0 | Lo1 |
| 2 | Components of contracts | 2 | | 0 | Lo2, Lo3 |
| 3 | Bids and Liabilities | 2 | | 0 | Lo2, Lo3 |
| 4 | Relationship between concerned people in construction projects - stages of project preparation | 2 | | 0 | Lo1, Lo6 |
| 5 | Tender documents | 2 | | 0 | Lo2 |
| 6 | Tendering procedures | 2 | | 0 | Lo2 |
| 7 | Calculations of quantities & (Quiz) | 2 | | 0 | Lo1, Lo2, Lo3, Lo6 |
| 8 | **Mid-term exam** | 1 | | | Lo1, Lo2, Lo3, Lo6 |
| 9 | Cost estimate | 2 | | 0 | Lo2 |
| 10 | Final invoice – Specifications: Types of specifications | 2 | | 0 | Lo2 |
| 11 | Types of contracts and judgment | 2 | | 0 | Lo4, Lo5 |
| 12 | Public & Private sectors Partnership | 2 | | 0 | Lo4, Lo5 |
| 13 | B.O.T projects | 2 | | 0 | Lo1, Lo2, Lo3 |
| **14** | Claims | 2 | | 0 | Lo2 |
| **15** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 26 | 0 | 0 | |

## 9- The Teaching and Learning Methods and their relation to the Los of the course

| | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| **On line / face to face lectures** | | | | | | |
| **Tutorials: sheets/ sketches** | | | | | | |
| **projects** | | | | | | |
| **Problem solving** | | | | | | |
| **Brain storming** | | | | | | |
| **Practical: lab** | | | | | | |
| **discovering** | | | | | | |
| **Site visit** | | | | | | |
| **Reports/ researches** | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

## 10- Student assessment method

a. **Assessment method and its relation to the Los of the course**

| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

| 11- Grading System / Week: | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Quizzes | Quiz ( 1 ) | Week (6) | | (10) marks | (30) marks |
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-13) | (50) % | | |
| Researches and reports | | Week (14) | (10) % | | |
| Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (15) | | (50) marks | |
| Total | | | | (100) marks | |

| 12- List of references: | | |
|---|---|---|
| a. | **Course notes** | Lecturer Notes |
| b. | **Rquired books** | N.A |
| c. | **Recommended books** | - CVEE397 دار النهضة العربية القانون والمهندس د/ نبيل عبد البديع يحيى<br>- CVEE254 دار الكتب العلمية السيد عبدالفتاح القصبى عقود ومواصفات الاعمال الانشائية للنشر والتوزيع<br>- CVEE365 قانون رقم 106 لسنة 1976 فى شأن توجيه و تنظيم اعمال البناء<br>- CVEE214 ادارة مشروعات التشييد |
| d. | **Periodicals, Web sites, etc** | N.A |

**13- Facilities required for teaching and learning:**

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- References in the library

**14- Requirements for Disable facilities:**

**- None**

| | |
|---|---|
| **Course coordinator:** | Dr.Ashraf Abdelkhalek Mostafa |
| **Program Coordinator:** | Civil Engineering |
| **Head of the Department:** | Dr.Ashraf Abdelkhalek Mostafa |
| **Date:** | 2023/2024 |

2-BASE 402 Feasibility studies:

# Course Specification

| Course Code: | Course Name |
|---|---|
| BASE 402 | **Feasibility Studies** |

## A- Affiliation

| | |
|---|---|
| **Relevant program:** | Electrical Power Engineering program<br>Civil Engineering program |
| **Department offering the program:** | Electrical Power Engineering program Civil Engineering program |
| **Department offering the course:** | Basic Science |
| **Date of program operation:** | 2008 -2009 |
| **Date of approval from the Higher Ministry of education** | **27/1/2008** |
| **Date of course operation** | **2023-2024** |

## B-Basic Information

| | |
|---|---|
| **Title** | **Feasibility Studies** |
| **Code** | **BASE 402** |
| **Credit Hours** | **3 hrs** |
| **Lectures** | **2 hrs** |
| **Tutorial** | **2 hrs** |
| **practical** | **0 hrs** |
| **Total** | **4 hrs** |
| **Prerequisite** | **Math 101** |
| **Instructor Name/Email** | **Dr. asmaa soliman** |

# C- Professional Information

## 1-Course Core

This course introduces students to the meaning, importance, and effects of feasibility study. It also deals with the analysis of decision problems under uncertainty, partial information, risk and competition. Considers the analytic hierarchy process outranking procedures and multi-attribute utility theory.

| **2-Course Learning Objectives:** ( oc ) | |
|---|---|
| oc1 | Illustrate importance of feasibility studies for projects. |
| oc2 | Definition of feasibility study and historical development of interest. |
| oc3 | Preliminary feasibility studies and their components. |
| oc4 | Identify the most important financing aspects in the feasibility study: sources of financing, how to calculate their cost, and criteria for choosing the best sources. |
| oc5 | Making feasibility study evaluation for projects |
| oc6 | Illustrate Feasibility study evaluation methods. |

| **3-program objectives served by the course:** ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O2 | Apply strategies to solve societal problems. |
| O3 | Maintain the built environment with its social, economic and environmental aspects to achieve the 2030 sustainable development goals. |
| O6 | Professional development based on self-learning and continuous learning. |
| O9 | Qualification to deal with the latest materials and systems that can transform engineering drawings into a real condition that meets the needs of the client and the era. |
| O10 | Analysis and deduction through simulation systems. |
| O11 | Conducting scientific research. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O2,O10,O11 |
| oc 2 | O2,O4 |
| oc 3 | O2 |
| oc 4 | O6 |
| oc 5 | O3,O9 |
| oc 6 | O2 |

| 5- Program competencies served by the course: | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO4 | Use statistical analyses and objective engineering judgment to draw conclusions. |
| LO5 | Display global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development. |
| LO16 | Solve complex engineering problems. |
| LO21 | Conduct techniques and methods of investigation as researches and reports. |
| LO26 | Plan and manage construction processes |

| 6- Learning outcomes of the course (Los): | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Identify the nature of the project, its components and forms. |
| Lo2 | Illustrate preliminary feasibility studies and their components. |
| Lo3 | Study the effects of environmental feasibility studies. |
| Lo4 | Impact of social feasibility study on mega projects. |
| Lo5 | Utilize feasibility study evaluation methods to making feasibility reports |
| Lo6 | Develop cash flow diagrams for projects and studying its effects on the feasibility of projects. |

| 7-The relation between the course learning outcomes and the program competencies | |
|---|---|
| **program competencies** | **Course (Los)** |

| | | |
|---|---|---|
| 1 | ,LO16 | Lo1 |
| 2 | LO4 | Lo2 |
| 3 | LO5 | Lo3 |
| 4 | LO21 | Lo4 |
| 5 | LO26 | Lo5 |
| 6 | LO21 | Lo6 |

## 7- Course Content and their to the course LOs

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | LOs |
|---|---|---|---|---|---|
| 1 | The importance of feasibility studies for projects. | 2 | 0 | 0 | Lo1 |
| 2 | Definition of feasibility study and historical development of interest. | 2 | 0 | 0 | Lo2, Lo3 |
| 3 | The nature of the project, its components and forms. | 2 | 0 | 0 | Lo2, Lo3 |
| 4 | Preliminary feasibility studies and their components. | 2 | 0 | 0 | Lo1, Lo6 |
| 5 | Environmental feasibility studies + Quiz (1) | 2 | 0 | 0 | Lo2 |
| 6 | Environmental feasibility studies. | 2 | 0 | 0 | Lo2 |
| 7 | Making cash flow diagram for construction projects | 2 | 0 | 0 | Lo1, Lo2, Lo3, Lo6 |
| 8 | **Mid-term exam** | 1 | | | Lo1, Lo2, Lo3, Lo6 |
| 9 | A social feasibility study design criterion. | 2 | 0 | 0 | Lo2 |
| 10 | The most important financing aspects in the feasibility study: sources of financing, how to calculate their cost, and criteria for choosing the best sources. | 2 | 0 | 0 | Lo2 |
| 11 | The most important financing aspects in the feasibility study: preparing financial statements, financial obligations on the project, and financial incentives for projects | 2 | 0 | 0 | Lo4, Lo5 |
| 12 | Technical and engineering feasibility of the project | 2 | 0 | 0 | Lo4, Lo5 |
| 13 | Feasibility study evaluation methods. + Quiz (2) | 2 | 0 | 0 | Lo1, Lo2, Lo3 |
| 14 | Feasibility study evaluation methods. | 2 | 0 | 0 | |
| 15 | Revision | 2 | 0 | 0 | |

| | | | | | |
|---|---|---|---|---|---|
| **16** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 28 | 0 | 0 | |

## 8- The Teaching and Learning Methods and their relation to the Los of the course

| | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| **On line / face to face lectures** | | | | | | |
| **Tutorials: sheets/ sketches** | | | | | | |
| **projects** | | | | | | |
| **Problem solving** | | | | | | |
| **Brain storming** | | | | | | |
| **Practical: lab** | | | | | | |
| **discovering** | | | | | | |
| **Site visit** | | | | | | |
| **Reports/ researches** | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

## 9- Student assessment method

a. **Assessment method and its relation to the Los of the course**

| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

| 11- Grading System / Week | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Quizzes | Quiz ( 1 ) | Week (5) | | (5) marks | (50) marks |
| | Quiz ( 2 ) | Week (13) | | (5) marks | |
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-13) | (60) % | | |
| Researches and reports | | Week (14) | (0) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (15) | | (50) marks | |
| Total | | | | (100) marks | |

| 12- List of references: | |
|---|---|
| a. **Course notes** | -The importance of feasibility studies for projects , The conceptual estimation report , Time adjustment , location adjustment , size adjustment and forecast cost estimation . |
| b. **Required books** | -Project evaluation and feasibility analysis by Kevin baker.<br><br>-Financial feasibility studies for property development theory and practice TIMHAVARD. |
| **c. Recommended books** | - Feasibility study, project management, professional pm wiring note book |
| d. **Periodicals, Web sites, etc** | - https://www.researchgate.net/publication/341134813_A_PRACTICAL_GUIDE_TO_WRITING_A_FEASIBILITY_STUDY |

| 13- Facilities required for teaching and learning: |
|---|
| - Appropriate teaching design studios including presentation board, data show<br>- Google classroom<br>- E- learning |

| 14- Requirements for Disable facilities: |
|---|
| - On line teaching hours if it is needed |
| - Extra assignments |

| | |
|---|---|
| **Course coordinator:** | **Dr. asmaa soliman** |
| **Program Coordinator** | Civil Engineering |
| **Head of the Department** | Dr. Amera Marye |
| **Date:** | 2023/2024 |

3-CVEE206 Civil Engineering cost Analysis & Project:

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 206 | Civil Engineering Cost Analysis & Project Management |

## A- Affiliation

| | |
|---|---|
| **Relevant program:** | **Civil Engineering** |
| **Department offering the program:** | **Civil Engineering** |
| **Department offering the course:** | **Civil Engineering** |
| **Date of program operation:** | **2009-2010** |
| **Date of approval from the Higher Ministry of education** | **27/1/2008** |
| **Date of course operation** | **2023-2024** |

## B- Basic Information

| | |
|---|---|
| **Title** | **Civil Engineering Cost Analysis & Project Management** |
| **Code** | **CVEE 206** |
| **Credit Hours** | **3** |
| **Lectures** | **2** |
| **Tutorial** | **2** |
| **practical** | **0** |
| **Total** | **4** |
| **Prerequisite** | **N/A** |
| **Instructor name/Email** | **Dr. asmaa soliman** |

# C- Professional Information

## 1-Course Core

Covers economic analysis and evaluation of civil engineering proposals utilizing time-value and related factors; time value of money; worth of investments and economic evaluation of alternative choices; replacement and retention decisions; selection from independent projects; inflation; cost estimating fundamentals; parametric cost estimating; depreciation methods; breakeven analysis; benefit cost analysis; sensitivity analysis and decision making under risk. Introduction to construction management: participants involved, types of construction, project life cycle, contractual relationships and responsibilities, International contracts and managerial function

| **2-Course Learning Objectives:** ( oc ) | |
|---|---|
| oc1 | Illustrate time value evaluation of civil engineering projects. |
| oc2 | Definition of cost estimating parameters. |
| oc3 | Work breakdown structure for projects. |
| oc4 | Identify time and cost control financing. |
| oc5 | Making cash flow of structural projects considering sensitivity and risk analysis. |
| oc6 | Illustrate international contracts and management functions. |

| **3-program objectives served by the course:** ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |
| O6 | Professional development based on self-learning and continuous learning. |
| **4-The relation between the course objectives and the program objectives** | |

| Course objectives | program objectives |
|---|---|
| oc1 | O1 ,O2 |
| oc 2 | O2 |
| oc 3 | O2,O4 |
| oc 4 | O1 ,O2 |
| oc 5 | O4 ,O6 |
| oc 6 | O6 |

| **5- Program LOs served by the course:** | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO3 | Assess and evaluate findings. |
| LO5 | Display global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development. |
| LO6 | Define standards, quality guidelines, health and safety requirements, environmental issues and risk management principles. |
| LO27 | Transform design concepts into buildings. |
| LO28 | integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery. |

| **6- Learning outcomes of the course (Los)** | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Identify the nature of the project, its components and forms. |
| Lo2 | Illustrate processes of management constructions. |
| Lo3 | Study the wordbreak down of structures. |
| Lo4 | Impact of risk analysis management on mega projects. |

| | |
|---|---|
| Lo5 | Define worth of investments and economic evaluation of alternative choices, inflation, international contracts and bidding. |
| Lo6 | Develop cash flow diagrams for projects and studying its effects. |

| **7-The relation between the course learning outcomes and the program competencies** | | |
|---|---|---|
| **program competencies** | | **Course (Los)** |
| **1** | LO3 | Lo1 |
| **2** | LO5 | Lo2 |
| **3** | LO6 | Lo3 |
| **4** | LO27 | Lo4 |
| **5** | LO28 | Lo5 |
| **6** | LO27, LO28 | Lo6 |

**8- Course Content and they're to the course LOs**

| **Week No.** | **Topic** | **Lecture hr.** | **Tutorial hr.** | **Practical hours** | **Los** |
|---|---|---|---|---|---|
| 1 | The importance of project management. | 2 | 2 | 0 | Lo1 |
| 2 | Definition of projects and its components. | 2 | 2 | 0 | Lo2, Lo3 |
| 3 | The nature of the project, its components and forms. | 2 | 2 | 0 | Lo2, Lo3 |
| 4 | Resources of construction projects. | 2 | 2 | 0 | Lo1 |
| 5 | Scheduling of project activities. | 2 | 2 | 0 | Lo2 |
| 6 | Making activity on node and bar chart for construction projects. | 2 | 2 | 0 | Lo2 |
| 7 | Quiz (1) | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| 8 | **Mid-term exam** | 1 | | | Lo1, Lo2, Lo3 |
| 9 | Histogram analysis for construction projects. | 2 | 2 | 0 | Lo2 |

| | | | | | |
|---|---|---|---|---|---|
| 10 | Leveling and allocations for construction projects. | 2 | 2 | 0 | Lo2 |
| 11 | Cash flow analysis for construction projects. | 2 | 2 | 0 | Lo4, Lo5 |
| 12 | Cash flow analysis for construction projects. | 2 | 2 | 0 | Lo4, Lo5 |
| 13 | Technical and feasibility study evaluation methods. | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| **14** | Feasibility study evaluation methods. | 2 | 2 | 0 | Lo2 |
| **15** | Quiz (2) | 2 | 2 | 0 | Lo1: Lo6 |
| **16** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 28 | 28 | 0 | |

**9- The Teaching and Learning Methods and their relation to the Los of the course**

| Course learning Outcomes (LOs) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| On line / face to face lectures | | | | | | |
| Tutorials: sheets/ sketches | | | | | | |
| projects | | | | | | |
| Problem solving | | | | | | |
| Brain storming | | | | | | |
| Practical: lab | | | | | | |
| discovering | | | | | | |
| Site visit | | | | | | |
| Reports/ researches | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

**10- Student assessment method**

| **a- Assessment method and its relation to the Los of the course** | | | | | | |
|---|---|---|---|---|---|---|
| **Course lLOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

| **11- Grading System / Week:** | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Quizzes | Quiz ( 1 ) | Week (7) | | (5) marks | |
| Discussions | | Weekly | (40) % | | |
| Sheets and Sketches | | Week (7-10-13-15) | (50) % | | (40) marks |
| Researches and reports | | | (10) % | (5) marks | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |

| | | | | | |
|---|---|---|---|---|---|
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (60) marks | |
| Total | | | | (100) marks | |

| **11- List of references:** | |
|---|---|
| **a- Course notes** | The importance of feasibility studies for projects , The conceptual estimation report , Time adjustment , location adjustment , size adjustment and forecast cost estimation, |
| **b- Required books** | -Construction project management, Prof.Dr. Ibrahim Abdul Rashid Nosier<br><br>-Project evaluation and feasibility analysis by Kevin baker.<br><br>-Financial feasibility studies for property development theory and practice TIMHAVARD. |
| **c- Recommended books** | - Feasibility study, project management, professional pm wiring note book |
| **d- Periodicals, Web sites, etc** | - https://www.researchgate.net/publication/341134813_A_PRACTICAL_GUIDE_TO_WRITING_A_FEASIBILITY_STUDY |

| **12- Facilities required for teaching and learning:** |
|---|
| - Appropriate teaching design studios including presentation board, data show<br>- Google classroom<br>- References in the library |

| **13- Requirements for Disable facilities:** |
|---|
| - On line teaching hours if it is needed |
| - Extra assignments |

| | |
|---|---|
| **Course Instructor** | **Dr. asmaa soliman** |
| **Head of the Department** | Dr. Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

# 4-CVEE311 Highway Design:

## Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 311 | Highway Design |

## A- Affiliation

| | |
|---|---|
| Department offering the program: | Civil Engineering |
| Relevant program: | Civil Engineering |
| Department offering the course: | Civil Engineering |
| Date of program operation: | 2009-2010 |
| Date of approval from the Higher Ministry of Education | 27/1/2008 |
| Date of course operation | 2023-2024 |

## B-Basic Information

| | |
|---|---|
| Title | Highway Design |
| Code | CVEE 311 |
| Credit Hours | 3 |
| Lectures | 2 |
| Tutorial | 2 |
| practical | 0 |
| Total | 4 |
| Prerequisite | CVEE 201 |
| Instructor name/Email | Professor. Nasser mohamed |

## C- Professional Information

### 1-Course core:

Design concepts, options for increased sustainability, integration issues, construction materials. Students will explore driver and vehicle characteristics, stopping and passing sight distances, cross section elements, vertical and horizontal alignment, intersections and interchanges, surface drainage, types of pavements, and principles, theoretical concepts and design of flexible and rigid pavements

| 2-Course Learning Objectives: ( oc ) | |
|---|---|
| Oc1 | Analyze principles of Highway. |
| Oc2 | Recognize sight distance on horizontal and vertical alignment. |
| Oc3 | Identify curve types and curve components. |
| Oc4 | Design of the highway. |
| Oc5 | Design flexible pavement by ASHTTO method |

| 3-Program objectives served by the course: (o) | |
|---|---|
| Upon the completion of the course, the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O3 | Maintain the built environment with its social, economic and environmental aspects to achieve the 2030 sustainable development goals. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O1, O2, O3 |
| oc 2 | O1,O3 |
| oc 3 | O1-O3 |
| oc 4 | O1,O4 |
| oc 5 | O3 |

| 5- Program LOs served by the course: | |
|---|---|
| Upon the completion of the course, the student should be able to: | |
| LO10 | Display relevant topics for Transportation and Traffic, Roadways and Airports, Railways, Sanitary Works, Irrigation, Water Resources and Harbors. |
| LO19 | Apply engineering design processes to produce cost-effective solutions that meet specified needs. |
| LO24 | Use numerical techniques or physical measurements and/or testing by applying a full range of civil engineering concepts and techniques. |

| 6- Learning outcomes of the course (Los) | |
|---|---|
| Upon the completion of the Program, the student should be able to: | |
| Lo1 | Identify and compute the suitable statical system. |
| Lo2 | Identify the geometric and structural design of including beams subjected to torsion. |
| Lo3 | Select appropriate solutions for engineering problems based on analytical thinking. |
| Lo4 | Illustrated columns under biaxial bending, and slender columns (long columns). |
| Lo5 | Design of frames and stairs, sawtooth structures, and trusses. |
| Lo6 | Drawing reinforcement details for reinforced concrete elements. |

| 7-The relation between the course learning outcomes and the program competencies | | |
|---|---|---|
| program competencies | | Course (Los) |
| 1 | LO19 | Lo1 |
| 2 | LO24 | Lo2 |
| 3 | LO10,LO19 | Lo3 |
| 4 | LO24 | Lo4 |
| 5 | LO19 | Lo5 |
| 6 | LO10,LO19 | Lo6 |

**8- Course Content and they're to the course LOs**

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | Los |
|---|---|---|---|---|---|
| 1 | Introduction | 2 | 2 | 0 | Lo1, Lo2 |
| 2 | Horizontal Alignment | 2 | 2 | 0 | Lo2, Lo3 |
| 3 | Horizontal Alignment – (Spiral curve – Super-elevation) & (Quiz) | 2 | 2 | 0 | Lo2, Lo3 |
| 4 | (Spiral curve – Super-elevation) & (Quiz) | 2 | 2 | 0 | Lo1, Lo5 |
| 5 | (Spiral curve – Super-elevation) & (Quiz) | 2 | 2 | 0 | Lo4 |
| 6 | Vertical Alignment | 2 | 2 | 0 | Lo3, Lo4 |
| 7 | Quiz (1) | 2 | 2 | 0 | Lo2, Lo4 |
| 8 | **Mid-term exam** | **Mid-term exam** | | | Lo1, Lo4 |
| 9 | Vertical Alignment | 2 | 2 | 0 | Lo5 |
| 10 | Intersection Design | 2 | 2 | 0 | Lo5, Lo6 |
| 11 | Intersection Design | 2 | 2 | 0 | Lo5 |
| 12 | Structure Design of flexible Pavement | 2 | 2 | 0 | Lo5,Lo6 |
| 13 | Structure Design of flexible Pavement | 2 | 2 | 0 | Lo5 |

| | | | | | |
|---|---|---|---|---|---|
| **14** | Revision for all course content | 2 | 2 | 0 | Lo1: Lo6 |
| **15** | Quiz (2) | 2 | 2 | 0 | Lo5: Lo6 |
| **16** | **Final exam** | **Final exam** | | | Lo4: Lo6 |
| **Total hours** | | 28 | 28 | 28 | 0 |

**9- The Teaching and Learning Methods and their relation to the Los of the course**

| Course learning Outcomes (Los) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| **Online / face-to-face lectures** | | | | | | |
| **Tutorials: sheets/ sketches** | | | | | | |
| **projects** | | | | | | |
| **Problem-solving** | | | | | | |
| **Brainstorming** | | | | | | |
| **Practical: lab** | | | | | | |
| **discovering** | | | | | | |
| **Site visit** | | | | | | |
| **Reports/ researches** | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modeling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit, and the presentations.
- The Tutorials concern brain storming and the problem-solving.
- Online lectures are used as hybrid learning, but in the case of totally online learning all the used teaching and learning methods will be online.

**10- Student assessment method**

| b- Assessment method and its relation to the Los of the course | | | | | | |
|---|---|---|---|---|---|---|
| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
| quizzes | | | | | | |
| Mid-term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modeling | | | | | | |

| **Content** | **Time schedule of assessment** | | **Marks** | | |
|---|---|---|---|---|---|
| Quizzes | Quiz ( 1 ) | Week (14) | | (10) marks | (60) marks |
| | Quiz ( 2 ) | Week (15) | | (10) marks | |
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-11-13) | (60) % | | |
| Researches and reports | | | (0) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (40) marks | |
| Total | | | | (100) marks | |

| 12- List of references: | |
|---|---|
| a- CourseNotes | Lecture Notes |
| b- required books | |
| c- Recommended books | |
| d- periodicals, Web sites, etc | |

| 13- Facilities required for teaching and learning: |
|---|
| - Appropriate teaching design studios including presentation board, data show<br>- Google Classroom<br>- E-learning |

| 14-Requirements for Disable facilities: |
|---|
| - Online teaching hours if it is needed<br>- Extra assignments |

| | |
|---|---|
| **Course coordinator:** | **Dr Naser Mohamed** |
| **program coordinator** | Civil Engineering |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

# 4-CVEE330 Advanced Structural Steel Design:

## Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 330 | Advanced Structural Steel Design |

## Course Specifications

### A- Basic Information

| | |
|---|---|
| **Relevant program:** | Civil Engineering program |
| **Department offering the program:** | Civil Engineering program |
| **Department offering the course:** | Basic Science |
| **Date of program operation:** | 2008 -2009 |
| **Date of approval from the Higher Ministry of education** | 27/1/2008 |
| **Date of course operation** | 2023-2024 |

| | |
|---|---|
| **Course Name** | **Advanced Structural Steel Design** |
| **Corse Code** | **CVEE 330** |
| **Course Offered to Program** | **Civil Engineering** |
| **Department Offering the Course** | **Civil Engineering** |
| **Date of Program Operation** | **2008-2009** |
| **Date of Approval from the Higher Ministry of Education** | **27/1/2008** |
| **Date of Couse Operation** | **2021-2022** |
| **Credit Hours** | **3h** |
| **Lectures** | **2h** |
| **Tutorial** | **2h** |
| **practical** | **0h** |
| **Total** | **4h** |
| **Instructor Name** | **Dr Mona Fawzy** |
| **Instructor Email** | **Mona.fawzy@sve.edu.eg** |

# C- Professional Information

## 1- Course Core

**This course is recommended for seniors in the Architectural engineering program who are interested in learning the design of steel structures. The objectives of this are to learn the behavior and design of structural steel components (members and connections in two - dimensional (2D) truss and frame structures) and to gain an educational and comprehensive experience in the design of simple steel structures.**

| **2-Course Learning Objectives:** ( oc ) | |
|---|---|
| oc1 | This course presents the steel structural system and design. |
| oc2 | Studying general layout |
| oc3 | Studying loads on stringer |
| oc4 | Studying design of stringer. |
| oc5 | Studying design of cross girder |
| oc6 | Studying design of built-up section cross girder |
| oc7 | Studying design of simple and continuous connection between stringer and cross girder and design main girder. |

| **3-program objectives served by the course:** ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |

| **4-The relation between the course objectives and the program objectives** | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O1,O2,O4 |
| oc 2 | O1,O2,O4 |
| oc 3 | O1,O2,O4 |
| oc 4 | O1,O2,O4 |
| oc 5 | O1,O2,O4 |
| oc 6 | O1,O2,O4 |
| oc 7 | O1,O2,O4 |

| 5- Program competencies served by the course: | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO19 | Apply engineering design processes to produce cost-effective solutions that meet specified needs. |
| LO25 | Produce designs for Reinforced Concrete and Steel Structures, Foundations and Earth Retaining Structures. |
| LO29 | Work efficiently as an individual and share in team works. |
| LO31 | Use creative, innovative and flexible thinking. |
| LO32 | Acquire entrepreneurial and leadership skills to anticipate and respond to new situations. |

| 6- Learning outcomes of the course (Los): | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Identify and compute the design loads on a typical steel building. |
| Lo2 | Identify the different failure modes of steel tension and compression members and beams, and compute their design strengths. |
| Lo3 | Select the most suitable section shape and size for tension and compression members and beams according to specific design criteria |
| Lo4 | Design bolted and welded connections for tension and comp. members and beams. |
| Lo5 | Identify the different failure modes of bolted and welded connections, and determine their design strengths. |
| Lo6 | Observe, analyses data and Apply relevant AISC provisions to ensure safety and serviceability of structural steel elements. |

| 7-The relation between the course learning outcomes and the program competencies | | |
|---|---|---|
| | program competencies | Course (Los) |
| 1 | LO29 | Lo1 |
| 2 | LO31,LO32 | Lo2 |
| 3 | LO19,LO25 | Lo3 |
| 4 | LO25 | Lo4 |
| 5 | LO19,LO25 | Lo5 |
| 6 | LO31,LO32 | Lo6 |

| 8- Course Content and their to the course LOs | | | | | |
|---|---|---|---|---|---|
| **Week No.** | **Topic** | **Lecture hr.** | **Tutorial hr.** | **Practical hours** | Lo1 |
| 1 | Introduction and general layout | 2 | 2 | 0 | Lo2, Lo3 |
| 2 | Loads on stringer | 2 | 2 | 0 | Lo2, Lo3 |
| 3 | Design of stringer | 2 | 2 | 0 | Lo1 |
| 4 | Design of stringer | 2 | 2 | 0 | Lo2 |
| 5 | Design of cross girder | 2 | 2 | 0 | Lo2 |
| 6 | Quiz (1) | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| 7 | **Mid-term exam** | 1 | | | Lo1,lo 3, |
| 8 | loads on cross girder | 2 | 2 | 0 | Lo2, Lo3 |
| 9 | Design of cross girder | 2 | 2 | 0 | Lo3 |
| 10 | Design of built-up section cross girder | 2 | 2 | 0 | Lo4 |
| 11 | Design of simple and continuous connection between stringer and cross girder | 2 | 2 | 0 | Lo5 |
| 12 | Design of main girder | 2 | 2 | 0 | Lo6 |
| **13** | Design of main girder | 2 | 2 | 0 | Lo2, Lo4 |
| **14** | Quiz (2) | 2 | 2 | 0 | Lo6 |
| **15** | **Final exam** | 2 | | | Lo1,lo 6 |
| **Total hours** | | 28 | 28 | 0 | |

**9- The Teaching and Learning Methods and their relation to the Los of the course**

| Course learning Outcomes (Los) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| **Online / face-to-face lectures** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Tutorials: sheets/ sketches** | | | | | | |
| **projects** | | | | | | |
| **Problem-solving** | | | | | | |
| **Brainstorming** | | | | | | |
| **Practical: lab** | | | | | | |
| **discovering** | | | | | | |
| **Site visit** | | | | | | |
| **Reports/ researches** | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modeling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit, and the presentations.
- The Tutorials concern brain storming and the problem-solving.
- Online lectures are used as hybrid learning, but in the case of totally online learning all the used teaching and learning methods will be online.

**10- Student assessment method**

| **c- Assessment method and its relation to the Los of the course** | | | | | | |
|---|---|---|---|---|---|---|
| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
| quizzes | | | | | | |
| Mid-term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modeling | | | | | | |

| 11- Grading System / Week | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Quizzes | Quiz ( 1 ) | Week (7) | | (5) marks | (40) marks |
| | Quiz ( 2 ) | Week (15) | | (5) marks | |
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-13-15) | (60) % | | |
| Researches and reports | | | (0) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (5) marks | |
| Mid-term exam | | Week (8) | | (15) marks | |
| final exam | | Week (16) | | (60) marks | |
| Total | | | | (100) marks | |

| 12- List of references: | |
|---|---|
| a- **Course notes** | The concepts of structural steel design, |
| b- **Rquired books** | - Design of Steel Structures by Jay Shen, Bulent Akbas and Onur Seker.<br>- Steel Structures Design by Prof. Dr. Abdelrahman Khalil. |
| c- **Recommended books** | - Egyptian Code for Steel Construction. |
| d- **Periodicals, Web sites, etc** | |

**13- Facilities required for teaching and learning:**

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning

| **14- Requirements for Disable facilities:** |
|---|
| • On line teaching hours if it is needed<br>• Extra assignments |

| | |
|---|---|
| **Course coordinator:** | Dr.mona fawzy |
| **program Coordinator** | Civil Engineering |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

6-CVEE402 Methods& Equipment for Construction1:

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 402 | Methods & Equipment for Construction |

## A- Affiliation

| | |
|---|---|
| **Relevant program:** | Civil Engineering program |
| **Department offering the program:** | Civil Engineering program |
| **Department offering the course:** | Civil Engineering |
| **Date of program operation:** | 2008 -2009 |
| **Date of approval from the Higher Ministry of education** | **27/1/2008** |
| **Date of course operation** | **2023-2024** |

## B-Basic Information

| | |
|---|---|
| **Title** | **Methods & Equipment for Construction** |
| **Code** | **CVEE 402** |
| **Credit Hours** | **2 Cr. Hrs.** |
| **Lectures** | **1Hrs.** |
| **Tutorial** | **2 Hrs.** |
| **practical** | **0Hrs.** |
| **Total** | **3 Hrs.** |
| **Prerequisite** | **None** |
| **Instructor Name/Email** | **Dr. Naser mohamed** |

# C- Professional Information

## 1-Course Core

Site management. Techniques of building construction; methods, materials, tools and equipment; traditional, mechanized and prefabrication construction systems. Construction detailing. Selection, sizing, matching and operation of construction equipment. This course is conducted in 2 hours of teaching and 3 hours of laboratory work

| **2-Course Learning Objectives:** ( oc ) | |
|---|---|
| oc1 | This course introduces the study of construction operations as a dynamic process. |
| oc2 | Learn construction equipment usage in different building operations. |
| oc3 | Acquire skills to plan and implement equipment usage. |
| oc4 | Knowing modern types of equipment characteristics and usage. |
| oc5 | Acquire professional skills to operate construction equipment efficiently and safely. |
| oc6 | Applications on construction equipment economic problems. |

| **3- program objectives served by the course:** ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O3 | Maintain the built environment with its social, economic and environmental aspects to achieve the 2030 sustainable development goals. |
| O4 | plementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |

| **4-The relation between the course objectives and the program objectives** | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O1 |
| oc 2 | O2,O4 |
| oc 3 | O4 |
| oc 4 | O4 |
| oc 5 | O3 |
| oc 6 | O2,O3 |
| **5- Program competencies served by the course:** | |

| Upon the completion of the course the student should be able to: | |
|---|---|
| LO20 | Use contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements. |
| LO26 | Plan and manage construction processes. |
| LO28 | integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery. |
| LO34 | maintain safety in the implementation of the project. |

| **6- Learning outcomes of the course (Los):** | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Identify up to date technologies relevant to equipment usage and characteristics. |
| Lo2 | Assure health and safety requirements and environmental issues. |
| Lo3 | Select appropriate solutions for construction equipment problems based on analytical thinking |
| Lo4 | Reach engineering judgments considering balanced costs, benefits, safety, quality, reliability, and environmental impact. |
| Lo5 | Assess risks, and take appropriate steps to manage those risks. |
| Lo6 | Implement comprehensive engineering knowledge and understanding and intellectual skills in projects |

| **7- The relation between the course learning outcomes and the program competencies** | | |
|---|---|---|
| **program competencies** | | **Course (Los)** |
| 1 | LO20 | Lo1 |
| 2 | LO28, LO34 | Lo2 |
| 3 | LO26 | Lo3 |
| 4 | LO34 | Lo4 |
| 5 | LO26,LO34 | Lo5 |
| 6 | LO26 | Lo6 |

**8- Course Content and their to the course LOs**

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | Los |
|---|---|---|---|---|---|
| 1 | Introduction | 2 | 2 | 0 | Lo1 |
| 2 | Different equipment. | 2 | 2 | 0 | Lo2, Lo3 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Different techniques optimizing equipment for best production | 2 | 2 | 0 | Lo2, Lo3 |
| 4 | Different techniques optimizing equipment for best production | 2 | 2 | 0 | Lo1, Lo6 |
| 5 | Equipment Costs | 2 | 2 | 0 | Lo2 |
| 6 | Determining Equipment Costs | 2 | 2 | 0 | Lo2 |
| 7 | Determining Equipment Costs | 2 | 2 | 0 | Lo1, Lo2, Lo3, Lo6 |
| 8 | **Mid-term exam** | 1 | | | Lo1, Lo2, Lo3, Lo6 |
| 9 | Time Schedule | 2 | 2 | 0 | Lo2 |
| 10 | Calculating Equipment Costs and Monitoring its Development According time Schedule | 2 | 2 | 0 | Lo2 |
| 11 | Calculating Equipment Costs and Monitoring its Development According time Schedule | 2 | 2 | 0 | Lo4, Lo5 |
| 12 | Construction equipment in site | 2 | 2 | 0 | Lo4, Lo5 |
| 13 | Construction equipment in site | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| **14** | Cost analysis | 2 | 2 | 0 | Lo2 |
| **15** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 26 | 26 | 0 | |

**9- The Teaching and Learning Methods and their relation to the Los of the course**

| | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| **On line / face to face lectures** | | | | | | |
| **Tutorials: sheets/ sketches** | | | | | | |
| **projects** | | | | | | |
| **Problem solving** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Brain storming** | | | | | | |
| **Practical: lab** | | | | | | |
| **discovering** | | | | | | |
| **Site visit** | | | | | | |
| **Reports/ researches** | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

## 10- Student assessment method

a. **Assessment method and its relation to the Los of the course**

| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

## 11- Grading System / Week

| **Content** | **Time schedule of assessment** | | **Marks** | | |
|---|---|---|---|---|---|
| Quizzes | Quiz ( 1 ) | Week (7) | | (5) marks | (40) marks |
| | Quiz ( 2 ) | Week (15) | | (5) marks | |
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-13-15) | (60) % | | |
| Researches and reports | | | (0) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |

| | | | | | |
|---|---|---|---|---|---|
| Attendance | | weekly | | (5) marks | |
| Mid-term exam | | Week (8) | | (15) marks | |
| final exam | | Week (16) | | (60) marks | |
| Total | | | | (100) marks | |

| **12- List of references:** | |
|---|---|
| a. **Course notes** | معدات التشييد والبناء |
| b. **Rquired books** | الموسوعة الهندسيةلأنشاء المباني و المرافق العامة, عبداللطيف العطار, مطابع الوفاء, 1994 |
| **c. Recommended books** | الكود المصري لاعمال الطرق الحضرية والخلوية، مركز بحوث البناء والاسكان، 2016 |
| **d. Periodicals, Web sites, etc** | www.caterpillar.com |

**13- Facilities required for teaching and learning:**

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- References in the library

**14- Requirements for Disable facilities:**

**None**

| | |
|---|---|
| **Course coordinator:** | **Dr. Naser mohamed** |
| **Program Coordinator** | Civil Engineering |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

7-CVEE490 Senior project 1(Construction Managements):

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 490 | Senior Project 1 (Construction Managements) |

## A- Affiliation

| | |
|---|---|
| **Relevant program:** | - |
| **Department offering the program:** | **Civil Engineering** |
| **Department offering the course:** | **Civil Engineering** |
| **Date of program operation:** | **2009-2010** |
| **Date of approval from the Higher Ministry of education** | **27/1/2008** |
| **Date of course operation** | **2023-2024** |

## B- Basic Information

| | |
|---|---|
| **Title** | **Senior Project 1 (Construction Managements)** |
| **Code** | **CVEE 206** |
| **Credit Hours** | **1Cr. Hrs.** |
| **Lectures** | **1Hrs.** |
| **Tutorial** | **3 Hrs.** |
| **practical** | **0Hrs.** |
| **Total** | **4 Hrs.** |
| **Prerequisite** | **N/A** |
| **Instructor name/Email** | **Dr. Mohamed Badawy/ Dr.MohamedBadwy@sva.edu.eg** |

# C- Professional Information

## 1-Course Core

A cap stone project: Topics are selected by groups of students according to their area of interest upon advisors' approval. Projects address solutions to open ended applications using an integrated engineering approach.

| **2-Course Learning Objectives:** ( oc ) | |
|---|---|
| oc1 | Project definition and work breakdown structure. |
| oc2 | Scheduling and control model techniques. |
| oc3 | Resource allocation and leveling optimal schedules. |
| oc4 | Time and cost control. |
| oc5 | Making cash flow of structural projects considering sensitivity and risk analysis. |
| oc6 | Computer applications progress monitoring and evaluation. |

| **3-program objectives served by the course:** ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O2 | Apply strategies to solve societal problems. |
| O3 | Maintain the built environment with its social, economic and environmental aspects to achieve the 2030 sustainable development goals. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |
| O5 | Conduct professional research that solves civil problems. |
| O6 | Professional development based on self-learning and continuous learning. |
| O7 | Developing skills in employing modern computer programs in the analysis, design and modeling process. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O4 ,O6 |
| oc 2 | O4 |
| oc 3 | O5,O4 |
| oc 4 | O2,O4 |
| oc 5 | O3 |
| oc 6 | O7 |

| **5- Program competencies served by the course:** | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO5 | Display global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development. |
| LO23 | Use contemporary tools to implement engineering design drawings, and presentations. |
| LO32 | Acquire entrepreneurial and leadership skills to anticipate and respond to new situations. |
| LO28 | integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery. |

| **6- Learning outcomes of the course (LOs)**: | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Identify projects and work breakdown structure. |
| Lo2 | Illustrate processes of management constructions. |
| Lo3 | Study the wordbreak down of structures during computer applications. |
| Lo4 | Impact of risk analysis management on mega projects. |
| Lo5 | Define worth of investments and economic evaluation of alternative choices, inflation, international contracts and bidding. |
| Lo6 | Develop risk analysis management and BIM technology for structures. |

| **7-The relation between the course learning outcomes and the program competencies:** |
|---|

| program competencies | | Course (Los) |
|---|---|---|
| **1** | LO5 | Lo1 |
| **2** | LO23 | Lo2 |
| **3** | LO32 | Lo3 |
| **4** | LO23 | Lo4 |
| **5** | LO28 | Lo5 |
| **6** | LO28 | Lo6 |

**8- Course Content and they're to the course LOs**

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | Los |
|---|---|---|---|---|---|
| 1 | Project definition and work breakdown structure. | 2 | 2 | 0 | Lo1 |
| 2 | Scheduling and control model techniques. | 2 | 2 | 0 | Lo2, Lo3 |
| 3 | The nature of the project, its components and forms. | 2 | 2 | 0 | Lo2, Lo3 |
| 4 | Resources of construction projects. | 2 | 2 | 0 | Lo1 |
| 5 | Scheduling of project activities. | 2 | 2 | 0 | Lo2 |
| 6 | Resource allocation and leveling optimal schedules. | 2 | 2 | 0 | Lo2 |
| 7 | Documentation and reporting. Quiz (1) | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| 8 | **Mid-term exam (Progress in Project Presentation)** | 1 | | | Lo1, Lo2, Lo3 |
| 9 | Time and cost control. | 2 | 2 | 0 | Lo2 |
| 10 | Progress monitoring and evaluation. | 2 | 2 | 0 | Lo2 |
| 11 | Risk analysis Managements. | 2 | 2 | 0 | Lo4, Lo5 |
| 12 | Value engineering for construction projects. | 2 | 2 | 0 | Lo4, Lo5 |

| | | | | | |
|---|---|---|---|---|---|
| 13 | Computer applications | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| **14** | Applications of primavera projects | 2 | 2 | 0 | Lo2 |
| **15** | Quiz (2) | 2 | 2 | 0 | Lo1: Lo6 |
| **16** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 28 | 28 | 0 | |

## 9- The Teaching and Learning Methods and their relation to the Los of the course

| Course learning Outcomes (LOs) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| On line / face to face lectures | | | | | | |
| Tutorials: sheets/ sketches | | | | | | |
| projects | | | | | | |
| Problem solving | | | | | | |
| Brain storming | | | | | | |
| Practical: lab | | | | | | |
| discovering | | | | | | |
| Site visit | | | | | | |
| Reports/ researches | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

**10- Student assessment method**

| d- Assessment method and its relation to the Los of the course | | | | | | |
|---|---|---|---|---|---|---|
| **Course lLOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

| **11- Grading System / Week :** | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Quizzes | Quiz ( 1 ) | Week (7) | | (10) marks | (60) marks |
| | Quiz ( 2 ) | Week (15) | | (10) marks | |
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-13-15) | (50) % | | |
| Researches and reports | | | (10) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (10) marks | |

| | | | | | |
|---|---|---|---|---|---|
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (40) marks | |
| Total | | | | (100) marks | |

| **12- List of references:** | |
|---|---|
| **a- Course notes** | The importance of feasibility studies for projects , The conceptual estimation report , Time adjustment , location adjustment , size adjustment and forecast cost estimation, |
| **b- Required books** | - Construction project management, Prof.Dr. Ibrahim Abdul Rashid Nosier.<br>- Project evaluation and feasibility analysis by Kevin baker.<br>- Financial feasibility studies for property development theory and practice TIMHAVARD. |
| **c- Recommended books** | - Feasibility study, project management, professional pm wiring note book |
| **d- Periodicals, Web sites, etc** | - https://www.researchgate.net/publication/341134813_A_PRACTICAL_GUIDE_TO_WRITING_A_FEASIBILITY_STUDY |

| **13- Facilities required for teaching and learning:** |
|---|
| - Appropriate teaching design studios including presentation board, data show<br>- Google classroom<br>- References in the library |

| **14- Requirements for Disable facilities:** |
|---|
| - On line teaching hours if it is needed |
| - Extra assignments |

| | |
|---|---|
| **Course Instructor** | Dr. Mohamed Mahmoud Badawy |
| **Head of the Department** | Dr. Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

7-CVEE490 Senior project 1(Concrete design):

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 490 | Project Reinforced Concrete Design |

## A- Affiliation

| | |
|---|---|
| **Department offering the program:** | **Civil Engineering** |
| **Relevant program:** | **Civil Engineering** |
| **Department offering the course:** | **Civil Engineering** |
| **Date of program operation:** | 2009-2010 |
| **Date of approval from the Higher Ministry of Education** | **27/1/2008** |
| **Date of course operation** | **2023-2024** |

## B-Basic Information

| | |
|---|---|
| **Title** | **Project Reinforced Concrete Design** |
| **Code** | **CVEE 490** |
| **Credit Hours** | **1 Cr. Hrs.** |
| **Lectures** | **1 Hrs.** |
| **Tutorial** | **3 Hrs.** |
| **practical** | **0 Hrs.** |
| **Total** | **4 Hrs.** |
| **Prerequisite** | **-** |
| **Instructor name/Email** | **Professor. Mohamed Badawy.**<br>**dr.mohamedbadwy@sva.edu.eg** |

# Professional Information

## 1-Course core:

**Properties of plain concrete and reinforced concrete, behavior of composite sections, ultimate strength and working stress, design of structural elements, beams (Simple beams, continuous beams, cantilever beams), columns, frame,tanks, detailing of reinforcing steel.**

| 2-Course Learning Objectives: ( oc ) | |
|---|---|
| Oc1 | Know what is reinforced concrete. |
| Oc2 | Compute the loads acting on beams using load distribution. |
| Oc3 | Apply first principal equations for beam design. |
| Oc4 | Apply limit state method for beam design. |
| Oc5 | Know how to design columns, frames, tanks and beam by using a softwere program. |

| 3-Program objectives served by the course: (o) | |
|---|---|
| Upon the completion of the course, the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O7 | Developing skills in employing modern computer programs in the analysis, design and modeling process. |
| O9 | Qualification to deal with the latest materials and systems that can transform engineering drawings into a real condition that meets the needs of the client and the era. |
| O10 | Analysis and deduction through simulation systems. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O1 |
| oc 2 | O1,O7 |
| oc 3 | O1,O7 |
| oc 4 | O1 |
| oc 5 | O7,O9,O10 |

| **5- Program competencies served by the course:** | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO5 | Display global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development. |
| LO23 | Use contemporary tools to implement engineering design drawings, and presentations. |
| LO32 | Acquire entrepreneurial and leadership skills to anticipate and respond to new situations. |
| LO28 | integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery. |

| **6- Learning outcomes of the course (Los):** | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Design of reinforced concrete Hollow block slabs (one-way and two-way slabs |
| Lo2 | Identify and compute the design of Domes and cones. |
| Lo3 | Design of paneled beam slabs, and design of flat slabs. |
| Lo4 | Study the design of paneled shells, folded plates, and, verendil structures) |
| Lo5 | Understanding different types of tanks. |
| Lo6 | Behavior of reinforced concrete water sections applied to flexural moment and/or normal compression force. |

| 7-The relation between the course learning outcomes and the program competencies: | | |
|---|---|---|
| | **program competencies** | **Course (Los)** |
| **1** | LO5 | Lo1 |
| **2** | LO23 | Lo2 |
| **3** | LO32 | Lo3 |
| **4** | LO23 | Lo4 |
| **5** | LO28 | Lo5 |

| 8- Course Content and they're to the course LOs | | | | | |
|---|---|---|---|---|---|
| **Week No.** | **Topic** | **Lecture hr.** | **Tutorial hr.** | **Practical hours** | **Los** |
| 1 | Introduction of project | 1 | 3 | 0 | Lo1 |
| 2 | Design of section using the First principal (over and under reinforcement) | 1 | 3 | 0 | Lo2 |
| 3 | Statical system | 1 | 3 | 0 | Lo1,lo2 |
| 4 | Statical system | 1 | 3 | 0 | Lo2 |
| 5 | Beam and slab design using the ETAB and SAFE program | 1 | 3 | 0 | Lo1,lo2 |
| 6 | column design using the ETAB program | 1 | 3 | 0 | Lo2 |
| 7 | Compared results between manual and program design | 1 | 3 | 0 | Lo1,lo2 |
| 8 | **Mid-term exam** | 20 | | | Lo1,lo3 |
| 9 | Reinforcement details for beam and column | 1 | 3 | 0 | lo24 |
| 10 | Design of frame | 1 | 3 | 0 | Lo3 |
| 11 | Solve frame in sap 2000 | 1 | 3 | 0 | Lo5 |
| 12 | Design of tank | 1 | 3 | 0 | Lo3,lo4 |

| | | | | | |
|---|---|---|---|---|---|
| 13 | Solve tank in sap 2000 | 1 | 3 | 0 | Lo5 |
| **14** | Reinforcement details for frame and tank | 1 | 3 | 0 | Lo4,lo5 |
| **15** | Discuss of results | 1 | 3 | 0 | Lo1,Lo6 |
| **16** | Discuss project graduate | 50 | | | Lo1,Lo6 |
| **Total hours** | | 28 | 42 | 0 | |

**9- The Teaching and Learning Methods and their relation to the Los of the course**

| Course learning Outcomes (LOs) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| On line / face to face lectures | | | | | | |
| Tutorials: sheets/ sketches | | | | | | |
| projects | | | | | | |
| Problem solving | | | | | | |
| Brain storming | | | | | | |
| Practical: lab | | | | | | |
| discovering | | | | | | |
| Site visit | | | | | | |
| Reports/ researches | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.

- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

**10- Student assessment method**

| e- Assessment method and its relation to the Los of the course | | | | | | |
|---|---|---|---|---|---|---|
| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

| **11- Grading System / Week :** | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Quizzes | Quiz ( 1 ) | Week (7) | | (10) marks | (60) marks |
| | Quiz ( 2 ) | Week (15) | | (10) marks | |
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-13-15) | (50) % | | |
| Researches and reports | | | (10) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |

| | | | | | |
|---|---|---|---|---|---|
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (40) marks | |
| Total | | | | (100) marks | |

| 12- List of references: | |
|---|---|
| **a- Course Notes** | |
| **b- required books** | -Design of Reinforced Concrete Structure - Volume 1,2,3 - Prof. Mashhour Ghoneim & Prof. Mahmoud El-Mihilmy.2012 |
| **c- recommended books** | -Egyptian Code design for reinforced concrete2020. |
| **d- periodicals, Web sites, etc** | |

## 13- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google Classroom
- E-learning

## 14-Requirements for Disable facilities:

- Online teaching hours if it is needed
- Extra assignments

| | |
|---|---|
| **Course coordinator:** | **Dr. Mohamed Badawy** |
| **program coordinator** | Civil Engineering |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 490 | Project strength and testing of materials (Senior1) |

## A- Affiliation

| | |
|---|---|
| Department offering the program: | Civil Engineering |
| Relevant program: | Civil Engineering |
| Department offering the course: | Civil Engineering |
| Date of program operation: | 2009-2010 |
| Date of approval from the Higher Ministry of Education | 27/1/2008 |
| Date of course operation | 2023-2024 |

## B-Basic Information

| | |
|---|---|
| Title | Project strength and testing of materials |
| Code | CVEE 490 |
| Credit Hours | 1 Cr. Hrs. |
| Lectures | 1 Hrs. |
| Tutorial | 3 Hrs. |
| Total | 4Hrs. |
| Prerequisite | - |
| Instructor name/Email | Professor. Hany Ibrahim<br>Hani.ibrahim@sva.edu.eg |

## Professional Information

- **Course core:**

- Outline of project
- Special types of concrete and its properties
- Nano-technology
- Advanced engineering materials.
- Concrete mix design

### 1- Course Learning Objectives: ( oc )

| | |
|---|---|
| Oc1 | The outlines of projects (introduction- literature review- experimental- results- conclusion) |
| Oc2 | Identify the advanced types of concrete martials |
| Oc3 | Classify the special types of concrete and their properties |
| Oc4 | Design self-compacted concrete, light weight concrete, and fiber reinforced concrete mix |

### 2- Program objectives served by the course: (o)

Upon the completion of the course, the student should be able to:

| | |
|---|---|
| O1 | Solve and apply equations and problems to reach an effective solution to serve the community |
| O2 | Developing the spirit of creativity in concrete mix design and implementation to participate in national construction project |
| O3 | Gain experience in dealing with different concrete mixtures |

### 3- The relation between the course objectives and the program objectives

| | Course objectives | program objectives |
|---|---|---|
| 1 | oc1 | O1, O2 |
| 2 | oc 2 | O1 |
| 3 | oc 3 | O1-O3 |
| 4 | oc 4 | O3 |

| | | |
|---|---|---|
| 5 | oc 5 | O2, O3 |

## 4- Learning outcomes of the course (Los)

Upon the completion of the course, the student should be able to:

| | |
|---|---|
| Lo1 | **Demonstrate the outlines of project** |
| Lo2 | **Clarify the special types of concrete** |
| Lo3 | **Identify the basic properties that characterize the behavior of advanced engineering materials.** |
| Lo4 | **Design concrete mix** |
| Lo5 | **Work both independently and as part of a team** |

## 1- Program competencies served by the course: (LOs)

**Upon the completion of the Program, the student should be able to:**

| | |
|---|---|
| LO2 | Simulate, analyze and interpret data |
| LO7 | State the factors affecting the engineering projects |
| LO12 | Assess environmental impacts of projects. |
| LO17 | Apply engineering fundamentals, basic science and mathematics. |
| LO18 | Conduct and Develop appropriate experimentation |
| LO29 | Work efficiently as an individual and share in team works |

## 2- The relation between the course learning outcomes and the program competencies

| | Course (Los) | program competencies |
|---|---|---|

| | | |
|---|---|---|
| 1 | Lo1 | LO29, LO2, LO7 |
| 2 | Lo2 | LO29, LO2 |
| 3 | Lo3 | LO17, LO29 |
| 4 | Lo4 | LO17, LO29 |
| 5 | Lo5 | LO29 |

**7- Course Content and they're to the course Los**

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | Los |
|---|---|---|---|---|---|
| 1 | The outlines of project | 1 | 3 | 0 | Lo1 |
| 2 | | | | | |
| 3 | Advanced types of materials:<br>▪ Pozzolanic materials<br>▪ Nano materials<br>▪ Composite materials | 1 | 3 | 0 | Lo3, Lo5 |
| 4 | | 1 | 3 | 0 | |
| 5 | | 1 | 3 | 0 | |
| 6 | Special types of concrete:<br>▪ Self-compacted concrete<br>▪ Light weight concrete<br>▪ High strength concrete | 1 | 3 | 0 | Lo2, Lo5 |
| 7 | | 1 | 3 | 0 | |
| | | 1 | 3 | 0 | |
| 8 | **First Presentation** | **First presentation** | | | |
| 9 | ▪ Geopolymer concrete | 1 | 3 | 0 | Lo2, Lo5 |
| 10 | ▪ Fiber reinforced concrete | 1 | 3 | 0 | |
| 11 | Mix design for self-compacted concrete | 1 | 3 | 0 | Lo4, Lo5 |
| 12 | Mix design for high strength concrete | 1 | 3 | 0 | |
| 13 | | 1 | 3 | 0 | |
| 14 | Mix design for light weight concrete | 1 | 3 | 0 | |
| **15** | Revision | 1 | 3 | 0 | Lo1-Lo5 |
| **16** | **Final presentation** | **Final presentation** | | | |

| | | | | |
|---|---|---|---|---|
| **Total hours** | 14 | 42 | 0 | 0 |

| Course learning Outcomes (LOs) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 |
|---|---|---|---|---|---|
| **Online / face-to-face lectures** | | | | | |
| **Tutorials: sheets/ sketches** | | | | | |
| **projects** | | | | | |
| **Problem-solving** | | | | | |
| **Brainstorming** | | | | | |
| **Practical: lab** | | | | | |
| **discovering** | | | | | |
| **Site visit** | | | | | |
| **Reports/ researches** | | | | | |
| Cooperative work | | | | | |
| presentation | | | | | |
| Discussion | | | | | |
| modeling | | | | | |

| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 |
|---|---|---|---|---|---|
| quizzes | | | | | |
| Mid-term exam | | | | | |
| Final exam | | | | | |
| sheets/ sketches | | | | | |
| projects | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Practical: lab | | | | | |
| Oral exam | | | | | |
| discussions | | | | | |
| Reports/ researches | | | | | |
| presentation | | | | | |
| modeling | | | | | |

| Content | Time schedule of assessment | | Marks | | |
|---|---|---|---|---|---|
| Quizzes | | Week () | | () marks | (60) marks |
| | | Week () | | () marks | |
| Discussions | | Weekly | (50) % | (20) marks | |
| Sheets and Sketches | | Week () | (20) % | | |
| Researches and reports | | | (30) % | | |
| the Projects | | | () % | ( 20)marks | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | | |
| First Presentation | | Week () | | (20) marks | |
| Final presentation | | Week (16) | | (40) marks | |
| Total | | | | (100) marks | |

## 10- List of references:

| | |
|---|---|
| **e- Course Notes** | |
| **f- required books** | Egyptian Code of practice for Concrete structures. |

| | |
|---|---|
| **g- recommended books** | a- NEVILLE, A.M., "Properties of Concrete", Longman, 5th ed., 2013.<br>b- Nkrishna Raju." Design of concrete mixes", New Delhi, 5nd ed.,2014.<br>c- Shackelford, James f.," Introduction to materials science for engineers", Pearson Education, 7th ed., 2009. |
| **h- periodicals, Web sites, etc** | **EKB** |

## 11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google Classroom
- E-learning

## 12- Requirements for Disable facilities:

- Online teaching hours if it is needed
- Extra assignments

| | |
|---|---|
| **Course coordinator:** | **Dr. Hany Ibrahim** |
| **program coordinator** | Dr.Ashraf Abdel khalek Mostafa |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023-2024 |

# Fifth level

## Courses Specifications

## Second Semester (Fall)

| No. | Cod | Course Name | Instructor |
|---|---|---|---|
| 1 | BASE308 | Seminar | Dr: Ashraf Abdelkhalek |
| 2 | BASE309 | Human Rights | Dr:Abd el aziz |
| 3 | CVEE336 | Railway Engineering | Dr:Nasr Mohamed |
| 4 | CVEE339 | Professional Training in civil Engineering | Dr: Ashraf Abdelkhalek |
| 5 | CVEE422 | Earthquake Engineering | Dr:Mohamed Badway |
| 6 | CVEE489 | Selected topics in Civil and Environmental Engineering | Dr: Ashraf Abdelkhalek |
| 7 | CVEE491 | Senior project 2 | |

**1-BASE308 Seminar:**

# Course Specification

| Course Code: | Course Name |
|---|---|
| Base 308 | Seminar |

## A- Affiliation

| | |
|---|---|
| **Relevant program:** | **-** |
| **Department offering the program:** | **Civil Program** |
| **Department offering the course:** | **Basic Science** |
| **Date of program operation:** | **2008-2009** |
| **Date of approval from the Higher Ministry of education** | **27/1/2012** |
| **Date of course operation** | **2023-2024** |

## B-Basic Information

| | |
|---|---|
| **Title** | **Seminar** |
| **Code** | **Base 308** |
| **Credit Hours** | **0 Cr. Hrs.** |
| **Lectures** | **2 Hrs.** |
| **Tutorial** | **0 Hrs.** |
| **practical** | **0Hrs** |
| **Total** | **2 Hrs.** |
| **Prerequisite** | **-----** |
| **Instructor name/Email** | **Dr. Ashraf Abdelkhalek**<br>ashraf.abdelkhalek@sva.edu.eg |

# C- Professional Information

## 1-Course core:

Engineering Topics conducted on a Weekly or Monthly Basis discussions with speakers from Industry and professors from the different Departments. Students should at least attend one seminar every year.

| 2-Course Learning Objectives: OC | |
|---|---|
| OC1 | Understand the design diverse aspects of development. |
| OC2 | The student can contribute with the latest business models concerning civil design. |

| 3-Program objectives served by the course: | |
|---|---|
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |
| O5 | Conduct professional research that solves civil problems. |
| O9 | Qualification to deal with the latest materials and systems that can transform engineering drawings into a real condition that meets the needs of the client and the era. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **Program objectives** |
| OC1 | O1, O2 |
| OC2 | O1,O4, O5,O9 |

| 5- Program competencies served by the course: | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO14 | Predict the knowledge of industries, organizations, regulations and procedures involved. |
| LO21 | Conduct techniques and methods of investigation as researches and reports. |
| LO29 | Work efficiently as an individual and share in team works. |
| LO30 | Communicate to convey ideas verbally, numerically, graphically, and using symbols effectively with a range of audiences. |
| LO23 | Use contemporary tools to implement engineering design drawings, and presentations. |

| **6- Learning outcomes of the course (Los)**: | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Utilize contemporary technologies, codes of practice and standards, quality guidelines. |
| Lo2 | Practice research techniques and methods of investigation. |
| Lo3 | Collaborate effectively within multidisciplinary team and communicate effectively in conducting physical and multimedia modeling. |
| Lo4 | Communicate effectively – verbally and in writing – with a range of audiences. |

| **7-The relation between the course learning outcomes and the program competencies:** | | |
|---|---|---|
| | **Course (LOs)** | **program competencies** |
| **1** | LO21 | Lo1 |
| **2** | LO29 | Lo2 |
| **3** | LO30 | Lo3 |
| **4** | LO14 | Lo4 |

| **8-Course Content** | | | | | |
|---|---|---|---|---|---|
| **Week No.** | **Topic** | **Lecture hr.** | **Tutorial hr.** | **Practical hours** | **Los** |
| 1 | Introduction to the course and its objectives and learning outcomes | 0 | 2 | 0 | Lo1 |
| 2 | Introduce the design diverse aspects of development | 0 | 2 | 0 | Lo1, Lo3 |
| 3 | Research 1st draft discussion | 0 | 2 | 0 | Lo2, Lo4 |
| 4 | Research 2nd draft discussion | 0 | 2 | 0 | Lo1, Lo3 |
| 5 | Research 3rd draft discussion | 0 | 2 | 0 | Lo2, Lo4 |
| 6 | Research 4th draft discussion | 0 | 2 | 0 | Lo2, Lo4 |
| 7 | Research 5th draft discussion | 0 | 2 | 0 | Lo2, Lo4 |
| 8 | Mid term | 20 | | | Lo1,lo4 |

| | | | | | |
|---|---|---|---|---|---|
| 9 | Learning Skills | 0 | 2 | 0 | Lo1, Lo3 |
| 10 | Contemporary design terms and concepts | 0 | 2 | 0 | Lo1, Lo3 |
| 11 | Research 1st draft discussion | 0 | 2 | 0 | Lo2, Lo4 |
| 12 | Research 2nd draft discussion | 0 | 2 | 0 | Lo2, Lo4 |
| 13 | Business model dashboard | 0 | 2 | 0 | Lo1, Lo3 |
| 14 | Final feedback of Researches. | 0 | 2 | 0 | Lo4 |
| 15 | Submitted Final Researches & Discussions. | 0 | 2 | 0 | Lo4 |
| 16 | Final | 50 | | | Lo1,lo4 |
| **Total hours** | | 0 | 28 | 0 | |

**9-The Teaching and Learning Methods and their relation to the Los of the course**

| Course learning Outcomes (LOs) / The Teaching and Learning Methods | Teaching and Learning Methods | | | |
|---|---|---|---|---|
| | Lo1 | Lo2 | Lo3 | Lo4 |
| On line / face to face lectures | | | | |
| Tutorials:sheets/ sketches | | | | |
| projects | | | | |
| Problem solving | | | | |
| Brain storming | | | | |
| Practical: lab | | | | |
| discovering | | | | |
| Site visit | | | | |
| Reports/ researches | | | | |
| Cooperative work | | | | |
| presentation | | | | |
| Discussion | | | | |
| Modeling | | | | |

| 10- Student assessment Method | | | | |
|---|---|---|---|---|
| **Assessment method and its relation to the Los of the course** | | | | |
| **Course learning Outcomes (LOs)** / **Assessment method** | **Tools of assessment** | | | |
| | Lo1 | Lo2 | Lo3 | Lo4 |
| Quizzes | | | | |
| Mid -term exam | | | | |
| Final Report | | | | |
| sheets/ sketches | | | | |
| projects | | | | |
| Practical: lab | | | | |
| Oral exam | | | | |
| discussions | | | | |
| Reports/ researches | | | | |
| presentation | | | | |
| modeling | | | | |

| 11- Grading System / Week : | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Presentations and Movies | Every week for any student | | 25% | 5 Marks | (20) Marks |
| Research | Week ( 13 )<br>Week ( 14 ) | | 25% | 5 Marks | |
| Attendance & Participation | weekly | | 50% | 10 Marks | |
| Report Final Discussion | | | | (30) marks | |
| Report Final Submission | | | | (50) marks | |
| Total | | | | (100) marks | |

| 12-List of references: | |
|---|---|
| **a. Course notes** | • Student have to take written note based on the instructor's lecture |
| **b. Recommended reference** | • Adaptive Environments Center (AEC). 1989. A CONSUMER'S GUIDE TO HOME ADAPTATION. Boston: Author.<br>• BARRIER-FREE AND BEAUTIFUL HOUSE PLANS. Volume 1. 200?. Des Moines, IA: FMR Home Portfolio.<br>• Bringa, O. R., Christophersen, J., Nordang, A. & Ronnevig, T. 2004. BUILDING FOR ALL: GUIDE BOOK ON UNIVERSAL DESIGN OF BUILDINGS AND OUTDOOR SPACES. The National Office of Building<br>• Center for Universal Design. 1998. PROCEEDINGS: DESIGNING FOR THE 21ST CENTURY I: INTERNATIONAL UNIVERSAL DESIGN CONFERENCE. Raleigh, NC: NCSU School of Design.<br>• Dobkin, I. & Peterson, M. J. 2000. UNIVERSAL INTERIORS BY DESIGN: GRACIOUS SPACES. New York: McGraw-Hill.<br>• Home Planners, LLC. 2000. PRODUCTS AND PLANS FOR UNIVERSAL HOMES. Tucson, AZ: Hanley-Wood LLC.<br>• International Code Council/American National Standards Institute. 2003. VOL-UNTARY STANDARD FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES (ICC/ANSI A117.1-2003).<br>• Leibrock, C. & Terry, J. E. 1999. BEAUTIFUL UNIVERSAL DESIGN: A VISUAL GUIDE. New York: Wiley.<br>• Levine, D. (Ed.) 2003. UNIVERSAL DESIGN NEW YORK 2. Buffalo: Center for Inclusive Design and Environmental Access, State University at Buffalo, NY<br>• Mueller, J. 1998. CASE STUDIES IN UNIVERSAL DESIGN. Raleigh, NC: Center for Universal Design (available at CUD).<br>• National Office of Building Technology (Norway). 2005. BUILDING FOR EVERYONE: UNDERSTANDING UNIVERSAL DESIGN OF BUILDINGS AND OUTDOOR SPACES.<br>• Adaptive Environments Center (AEC). 1989. A CONSUMER'S GUIDE TO HOME ADAPTATION. Boston: Author.<br>• BARRIER-FREE AND BEAUTIFUL HOUSE PLANS. Volume 1. 200?. Des Moines, IA: FMR Home Portfolio.<br>• Bringa, O. R., Christophersen, J., Nordang, A. & Ronnevig, T. 2004. BUILDING FOR ALL: GUIDE BOOK ON UNIVERSAL DESIGN OF BUILDINGS AND OUTDOOR SPACES. The National Office of Building<br>• Center for Universal Design. 1998. PROCEEDINGS: DESIGNING FOR THE 21ST CENTURY I: INTERNATIONAL UNIVERSAL DESIGN CONFERENCE. Raleigh, NC: NCSU School of Design.<br>• Dobkin, I. & Peterson, M. J. 2000. UNIVERSAL INTERIORS BY DESIGN: GRACIOUS SPACES. New York: McGraw-Hill.<br>• Home Planners, LLC. 2000. PRODUCTS AND PLANS FOR UNIVERSAL HOMES. Tucson, AZ: Hanley-Wood LLC.<br>• International Code Council/American National Standards Institute. 2003. VOL-UNTARY STANDARD FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES (ICC/ANSI A117.1-2003).<br>• Leibrock, C. & Terry, J. E. 1999. BEAUTIFUL UNIVERSAL DESIGN: A VISUAL GUIDE. New York: Wiley. |

| | |
|---|---|
| | • Levine, D. (Ed.) 2003. UNIVERSAL DESIGN NEW YORK 2. Buffalo: Center for Inclusive Design and Environmental Access, State University at Buffalo, NY<br>• Mueller, J. 1998. CASE STUDIES IN UNIVERSAL DESIGN. Raleigh, NC: Center for Universal Design (available at CUD).<br>• National Office of Building Technology (Norway). 2005. BUILDING FOR EVERYONE: UNDERSTANDING UNIVERSAL DESIGN OF BUILDINGS AND OUTDOOR SPACES. |

| **13-Facilities required for teaching and learning:** |
|---|
| • Data show for presentation<br>• Google Class Room<br>• E-Learning<br>• References in library |

| **14-Requirements for Disable facilities:** |
|---|
| • Extra assignments<br>• Online extra teaching hours |

| | |
|---|---|
| **Course coordinator** | Dr. Ashraf Abdelkhalek |
| **Head of the Department** | Dr. Amera Marye |
| **Date** | 2023/2024 |

2-BASE309 Human Rights:

# Course Specification

| Course Code: | Course Name |
|---|---|
| BASE 309 | Human Right |

| A- Affiliation | |
|---|---|
| **Relevant program:** | Electrical Power Engineering program<br>Civil Engineering program |
| **Department offering the program:** | Electrical Power Engineering program<br>Civil Engineering program |
| **Department offering the course:** | Basic Science |
| **Date of program operation:** | 2008 -2009 |
| **Date of approval from the Higher Ministry of education** | **27/1/2008** |
| **Date of course operation** | **2023-2024** |

## B-Basic Information

| | |
|---|---|
| **Title** | **Human Rights** |
| **Code** | **BASE 309** |
| **Credit Hours** | **0 Cr. Hrs.** |
| **Lectures** | **1 Hrs.** |
| **Tutorial** | **0 Hrs.** |
| **practical** | **0Hrs.** |
| **Total** | **1 Hrs.** |
| **Prerequisite** | **Math 101** |
| **Instructor Name/Email** | **Dr. Abdul-Aziz Ramadan** |

# C- Professional Information

## 1- Course core:

The course aims to identify what the human rights concepts, sources and types of human rights, and its applications in the engineering field. Also, it identifies its relations ethics and duties of the profession. As as the international institutional framework for handling with human rights and the mechanisms for the protection of rights issues at the international and national level. It also addresses the definition of non-government employment in the field of human rights.

| 2- Course Learning Objectives: | |
|---|---|
| OC1 | To improve overall understanding of students. |
| OC2 | To identify their rights which the society ,and increase their knowledge |
| OC3 | To handle any human rights problems which may face them during their employment career. |

| 3. Program objectives served by the course: | |
|---|---|
| O2 | Apply strategies to solve societal problems. |
| O5 | Conduct professional research that solves civil problems. |
| O6 | Professional development based on self-learning and continuous learning. |
| O8 | Gain experience in effective communication with the surrounding community. |

| 4. The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **Program objectives** |
| OC1 | O5,O6,O8 |
| OC2 | O2,O6 |
| OC3 | O2,O6,O8 |

| **5-Learning outcomes of the course (LOs)**: ( Lo ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO1 | Identify, formulate basic science and mathematics. |
| LO6 | Define standards, quality guidelines, health and safety requirements, environmental issues and risk management principles. |
| LO12 | assess environmental impacts of projects. |
| LO14 | Predict the knowledge of industries, organizations, regulations and procedures involved. |
| LO15 | Explain the role of industries, organizations, regulations and procedures involved. |
| LO29 | Work efficiently as an individual and share in team works. |

| **6-Program competencies served by the course:** | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| C1 | Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics. |
| C7 | Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams. |
| C4 | Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues and risk management principles. |
| C10 | Acquire and apply new knowledge; and practice self, lifelong and other learning strategies. |

| **7-The relation between the course learning outcomes and the program competencies:** | | |
|---|---|---|
| | **Course (LOs)** | **program competencies** |
| **1** | LO1 | C1 |
| **2** | LO29 | C7 |
| **3** | LO6,LO12 | C4 |
| **4** | LO14,LO15 | C10 |

## 8- Course Contents

| Topic | Lecture hours | Tutorial hours | Practical hours | LOS |
|---|---|---|---|---|
| 1- Definite and indefinite integrals | 1 | 0 | 0 | LO1, LO6 |
| 2- The fundamental theorem of calculus | 1 | 0 | 0 | LO1, LO6 |
| 3- The integral by substitutions | 1 | 0 | 0 | LO1, LO6 |
| 4- Rules of integral | 1 | 0 | 0 | LO12 |
| 5- integration of Exponential, Logarithmic, Trigonometric and other Transcendental functions | 1 | 0 | 0 | LO1, LO6 |
| 6- Techniques of integration | 1 | 0 | 0 | LO1, LO6 |
| 7- The integral by parts | 1 | 0 | 0 | LO1, LO6 |
| 8- midterm | 20 | | | LO1, LO6, LO15 |
| 9- the integral by partial fractions | 1 | 0 | 0 | LO1, LO6, LO29 |
| 10- Improper integrals | 1 | 0 | 0 | LO1, LO6, LO29 |
| 11- Numerical integration | 1 | 0 | 0 | LO1, LO6, LO29, LO15 |
| 12- Area, arc length | 1 | 0 | 0 | LO1, LO6, LO29, LO15 |
| 13- volumes and surfaces | 1 | 0 | 0 | LO1, LO6, LO29, LO15 |
| 14- Applications of the integration | 1 | 0 | 0 | LO1, LO6, LO29, LO15 |
| 15- Revision | 1 | 0 | 0 | LO1, LO6, LO29, LO15 |
| 16- Final Exam | 50 | | | LO1, LO6, LO29, LO15,LO14 |
| total | 14 | 0 | 0 | |

**9- The Teaching and Learning Methods and their relation to the Los of the course**

| The Teaching and Learning Methods \ Course learning Outcomes (LOs) | Teaching and Learning Methods | | | | | |
|---|---|---|---|---|---|---|
| | LO1 | LO6 | LO12 | LO14 | LO15 | LO29 |
| Interavctive lectures | | | | | | |
| Presentations and Movies | | | | | | |
| Discussions | | | | | | |
| Tutorials/Sketches | | | | | | |
| Problem solving | | | | | | |
| Brain storming | | | | | | |
| Lab | | | | | | |
| Site visits | | | | | | |
| Researches | | | | | | |
| Modelling | | | | | | |

Notes:

- The research concerns the cooperative work, the discussion, and the presentations.
- The exercises concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

## 10- Student assessment method

**f- Assessment method and its relation to the Los of the course**

| Course learning Outcomes (LOs) / Assessment method | Tools of assessment | | | | | |
|---|---|---|---|---|---|---|
| | LO1 | LO6 | LO12 | LO14 | LO15 | LO29 |
| Quizzes/ exams | | | | | | |
| Presentations and Movies | | | | | | |
| Discussions | | | | | | |
| Sheets and Sketches | | | | | | |
| Problem solving | | | | | | |
| lab | | | | | | |
| Site visits | | | | | | |
| Researches and reports | | | | | | |
| Modelling | | | | | | |

## 11- Grading System / Week :

| Content | Time schedule of assessment | | Marks | | |
|---|---|---|---|---|---|
| Quizzes | Quiz ( 1 ) | Week (7) | | (10) marks | (60) marks |
| | Quiz ( 2 ) | Week (15) | | (10) marks | |
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-13-15) | (50) % | | |
| Researches and reports | | | (10) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (40) marks | |

| | | | | |
|---|---|---|---|---|
| Total | | | | (100) marks |

## 12- List of references:

| | |
|---|---|
| **a- Course notes** | **Lecture notes and handouts** |
| **b- Required books** | .<br>• Mary Attenborough, Engineering Mathematics, McGraw - HILL Book Company Europe, 1994.<br>• Anthony croft,Robert Davison, Engineering Mathematics A modern Foundation for Electrical, Electronic & Control Engineering, Addison - Wesley - Publishing Company, 1992 |
| **c- Recommended books** | Swokowski, E, Olinick ,M and Pence, D., Calculus, PWS Publishing Company - Boston, 1994 |
| **d- Periodicals, Web sites, etc** | **No periodicals are needed.**<br>Web Sites related to Mathematics and Mathematical engineering as: |

## 13- Facilities required for teaching and learning:

Lecturer notes , Library- Internet - Data show - E-Learning moodle

## 14-Requirements for Disable facilities:

- Appropriate teaching design studios including presentation board, data show.
- Google class room ,E- learning Moodle

| | |
|---|---|
| **Course coordinator:** | Dr.Abdul-Aziz Ramadan |
| **program Coordinator** | |
| **(Head of the Department)** | Dr : amera marei |
| **Date:** | 2023/2024 |

3-CVEE336 Railway Engineering:

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 336 | Railway Engineering |

| A- Affiliation | |
|---|---|
| Relevant program: | Civil Engineering program |
| Department offering the program: | Civil Engineering program |
| Department offering the course: | Civil Engineering |
| Date of program operation: | 2008 -2009 |
| Date of approval from the Higher Ministry of education | 27/1/2008 |
| Date of course operation | 2023-2024 |

## B-Basic Information

| | |
|---|---|
| Title | Railway Engineering |
| Code | CVEE 336 |
| Credit Hours | 3 Cr. Hrs. |
| Lectures | 2 Hrs. |
| Tutorial | 2 Hrs. |
| practical | 0Hrs. |
| Total | 4 Hrs. |
| Prerequisite | None |
| Instructor Name/Email | Dr Mohamed mostafa |

# C- Professional Information

## 1- Course Core

Railway dynamics: Tractive effort and resistance, Acceleration and braking, Line capacity. Railway alignment: Longitudinal and cross sections, Railway path, Vertical and horizontal curve design, Gap rite, Cumulative curve. Structural design of track: Wheel - rail interaction, Forces acting on the rail, Joined and welded rail design, Sleeper and ballast design, Ballasted track and magnetic levitation train, Turnouts, Stations and signals, Renewal and maintenance.

| **2-Course Learning Objectives:** ( oc ) | |
|---|---|
| oc1 | Demonstration of the knowledge and understanding of the importance of railway systems. |
| oc2 | Definition of the different elements of the rail |
| oc3 | Define the components of railway base |
| oc4 | Identify causes of failure of railway base |
| oc5 | Planning of railway stations |

| **3-program objectives served by the course:** ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |

| **4-The relation between the course objectives and the program objectives** | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O1 |
| oc 2 | O1,O2,O4 |
| oc 3 | O1 |
| oc 4 | O1,O4 |
| oc 5 | O1,O4 |

| 5- Program competencies served by the course: | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO11 | address construction defects, instability and quality issues; maintain safety measures in construction and materials. |
| LO12 | assess environmental impacts of projects. |
| LO19 | Apply engineering design processes to produce cost-effective solutions that meet specified needs. |
| LO22 | Plan, supervise and monitor implementation of engineering projects. |
| LO29 | Work efficiently as an individual and share in team works. |

| 6- Learning outcomes of the course (Los): | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Describe the principle of the design of the schemes used for Railway elements design |
| Lo2 | Identify the different type of rolling train resistances |
| Lo3 | Identify different types of stations design |
| Lo4 | Select the suitable protective scheme for different railways system configurations based on analysis |
| Lo5 | Deducing relationships between solving methods |
| Lo6 | Pointing out the suitable method for railways systems analysis |
| Lo7 | Analyze any railway systems |
| Lo8 | Design different railway system elements |
| Lo9 | Search for information and engage in life-long self-learning discipline. |

| 7-The relation between the course learning outcomes and the program competencies | | |
|---|---|---|
| | program competencies | Course (Los) |
| 1 | LO29 | Lo1 |
| 2 | LO19 | Lo2 |
| 3 | LO11 | Lo3 |
| 4 | LO11 | Lo4 |
| 5 | LO22 | Lo5 |
| 6 | LO12 | Lo6 |
| 7 | LO11 | Lo7 |

| | | |
|---|---|---|
| **8** | LO12 | Lo8 |
| **9** | LO11 | Lo9 |

## 7- Course Content and their to the course LOs

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | Los |
|---|---|---|---|---|---|
| 1 | Introduction & railway track alignment | 2 | 2 | 0 | Lo1 |
| 2 | Railway track components | 2 | 2 | 0 | Lo2, Lo3 |
| 3 | Train resistances | 2 | 2 | 0 | Lo2, Lo3 |
| 4 | Locomotive tractive effort, | 2 | 2 | 0 | Lo1, Lo6 |
| 5 | Grades and grade resistance | 2 | 2 | 0 | Lo2 |
| 6 | Track definition, track components | 2 | 2 | 0 | Lo2 |
| 7 | **Mid-term exam** | 1 | | | Lo1, Lo2, Lo3, Lo6 |
| 8 | Base failure and its causes | 2 | 2 | 0 | Lo2 |
| 9 | Track alignment | 2 | 2 | 0 | Lo2 |
| 10 | Ballast design and stresses of ties | 2 | 2 | 0 | Lo4, Lo5 |
| 11 | Transition curves | 2 | 2 | 0 | Lo4, Lo5 |
| 12 | Railway Crossing | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| **13** | Geometric dimensions of switch turnout | 2 | 2 | 0 | Lo2 |
| **14** | Railway stations | 2 | 2 | 0 | Lo1: Lo6 |
| **15** | Signals types and definitions | | | | |
| **16** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 28 | 28 | 0 | |

## 8- The Teaching and Learning Methods and their relation to the Los of the course

| | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| **On line / face to face lectures** | | | | | | |
| **Tutorials: sheets/ sketches** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **projects** | | | | | | |
| **Problem solving** | | | | | | |
| **Brain storming** | | | | | | |
| **Practical: lab** | | | | | | |
| **discovering** | | | | | | |
| **Site visit** | | | | | | |
| **Reports/ researches** | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

## 9- Student assessment method

a. **Assessment method and its relation to the Los of the course**

| **Course ILos** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

**11-Grading System / Week**

| **Content** | **Time schedule of assessment** | | **Marks** | | |
|---|---|---|---|---|---|
| Quizzes | Quiz ( 1 ) | Week (6) | | (5) marks | (40) marks |
| | Quiz ( 2 ) | Week (14) | | | |
| Discussions | | Weekly | (40) % | (5) marks | |
| Sheets and Sketches | | Week (7-10-13) | (50) % | | |
| Researches and reports | | Week (15) | (10) % | | |
| Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |

| | | | | | |
|---|---|---|---|---|---|
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (60) marks | |
| Total | | | | (100) marks | |

| 12- List of references: | | |
|---|---|---|
| a. | **Course notes** | Lecturer Notes |
| b. | **Rquired books** | "Theory of Structures" Part 1 and 2, By W.M.El-Dakhakhini, Cairo, Dar El-Maaref, 2000.<br>http://www.greatbuildings.com/ |
| c. | Recommended books | "Theory of Structures" Part 1 and 2, By W.M.El-Dakhakhini, Cairo, Dar El-Maaref, 2000.<br>http://www.greatbuildings.com/ |
| d. | Periodicals, Web sites, etc | |

**13- Facilities required for teaching and learning:**

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- References in the library

**14- Requirements for Disable facilities:**

**None**

| | |
|---|---|
| **Course coordinator:** | Dr. Mohamed mostafa |
| **Program Coordinator** | Civil Engineering |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

**4-CVEE339 Professional Training in civil Engineering:**

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE339 | Professional Training in civil Engineering |

## A- Affiliation

| | |
|---|---|
| **Relevant program:** | **Civil Program** |
| **Department offering the program:** | **Civil** |
| **Department offering the course:** | **Civil** |
| **Date of department operation:** | **2008-2009** |
| **Date of approval from the Higher Ministry of education** | **27/1/2008** |
| **Date of course operation** | **2023-2024** |

## B- Basic Information

| | |
|---|---|
| **Title** | **Professional Training in Civil Engineering** |
| **Code** | **CVEE339** |
| **Credit Hours** | **3 Cr. Hrs.** |
| **Lectures** | **2Hrs.** |
| **Tutorial** | **0 Hrs.** |
| **practical** | **0 Hrs.** |
| **Total** | **0 Hrs.** |
| **Prerequisite** | **N/A** |
| **Instructor name/Email** | **Dr. Ashraf Abdelkhalek**<br>**Ashraf.abdelkhalek@sva.edu.eg** |

# C- Professional Information

## 1- COURSE CORE

Each student is required to spend a minimum of eight weeks in industrial training. A complete account of the experience is reported, presented and evaluated. Professional ethics: theories and analysis of ethical case studies

| 2- Course Learning Objectives: (oc) | |
|---|---|
| oc1 | Introducing the student to the profession's code of conduct. |
| oc2 | Introducing the student to the code of ethics. |
| oc3 | Educating students about the significance of a Bachelor of Engineering degree |
| oc4 | Developing learning skills. |
| **3-program objectives served by the course:** ( o ) | |
| Upon the completion of the course the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O6 | Professional development based on self-learning and continuous learning. |
| O8 | Gain experience in effective communication with the surrounding community. |
| O9 | Qualification to deal with the latest materials and systems that can transform engineering drawings into a real condition that meets the needs of the client and the era. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O6,O8 |
| oc2 | O8 |
| oc3 | O6,O9 |
| oc4 | O1,O9 |

| 5- Programs competencies served by the course | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO7 | State the factors affecting the engineering projects. |
| LO11 | address construction defects, instability and quality issues; maintain safety measures in construction and materials. |
| LO13 | Classify the constraints of: project financing, project management, cost control and methods of project delivery. |
| LO21 | Conduct techniques and methods of investigation as researches and reports. |
| LO22 | Plan, supervise and monitor implementation of engineering projects. |
| LO34 | maintain safety in the implementation of the project. |

| 6-: Learning outcomes of the course ( Lo ): | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Utilize contemporary technologies, codes of practice and standards, quality guidelines |
| Lo2 | Collaborate effectively within multidisciplinary team and communicate effectively in conducting physical and multimedia modeling |
| Lo3 | Communicate effectively – verbally and in writing – with a range of audiences. |

| 7-The relation between the course learning outcomes and the program competencies | | |
|---|---|---|
| | **program competencies** | **Course (Los)** |
| **1** | LO21 | Lo1 |
| **2** | LO7,LO13 | Lo2 |
| **3** | LO11,LO22LO34 | Lo3 |

## 6. Course Content and they're to the course LOs

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | LOs |
|---|---|---|---|---|---|
| 1 | Introduction to the course and its objectives and learning outcomes | 2 | 0 | 0 | Lo1 |
| 2 | Explain how the training report is fulfillment. | 2 | 0 | 0 | Lo2 |
| 3 | Code of practice. | 2 | 0 | 0 | Lo2 |
| 4 | The value of an architecture degree. | 2 | 0 | 0 | Lo3 |
| 5 | Each Student presents the first draft of their report. | 2 | 0 | 0 | Lo1 : Lo3 |
| 6 | Jobs that can be performed with an architecture degree. | 2 | 0 | 0 | Lo2 |
| 7 | Each Student presents the second draft of their report. | 2 | 0 | 0 | Lo3 |
| 8 | **Mid-term exam** | 1 | | | |
| 9 | Code of Architects of the United Kingdom – Part I. | 2 | 0 | 0 | Lo2 |
| 10 | Code of Architects of the United Kingdom – Part II. | 2 | 0 | 0 | Lo2 |
| 11 | Official holiday (Eid Al-Fater) | - | 0 | 0 | Lo1, Lo3 |

| | | | | | |
|---|---|---|---|---|---|
| 12 | Each Student presents the final draft of their report. | 2 | 0 | 0 | Lo1 |
| 13 | Standards of professional conduct and practice. | 2 | 0 | 0 | Lo3 |
| **14** | Final feedback of Reports. | 2 | 0 | 0 | Lo2 |
| **15** | Submitted the Final Report & discussions | 2 | 0 | 0 | Lo1: Lo3 |
| **16** | **Final exam** | 2 | | | Lo1: Lo3 |
| **Total hours** | | 26 | 0 | 0 | |

| The Teaching and Learning Methods / Course learning Outcomes (LOs) | Lo1 | Lo2 | Lo3 |
|---|---|---|---|
| **On line / face to face lectures** | | | |
| **Tutorials: sheets/ sketches** | | | |
| **projects** | | | |
| **Problem solving** | | | |
| **Brain storming** | | | |
| **Practical: lab** | | | |
| **discovering** | | | |
| **Site visit** | | | |
| **Reports/ researches** | | | |
| Cooperative work | | | |
| presentation | | | |
| Discussion | | | |
| modelling | | | |

| **10-Student assessment method** | | | |
|---|---|---|---|
| **Assessment method and its relation to the Los of the course** | | | |
| **Assessment method / Course learning Outcomes (Los)** | Lo1 | Lo2 | Lo3 |
| quizzes | | | |
| Mid -term exam | | | |

| | | | |
|---|---|---|---|
| Final exam | | | |
| sheets/ sketches | | | |
| projects | | | |
| Practical: lab | | | |
| Oral exam | | | |
| discussions | | | |
| Reports/ researches | | | |
| presentation | | | |
| modelling | | | |

**11-Grading System / Week**

| Content | Time schedule of assessment | | Marks | | |
|---|---|---|---|---|---|
| Quizzes | Quiz ( 1 ) | Week (6) | | (5) marks | (40) marks |
| | Quiz ( 2 ) | Week (14) | | | |
| Discussions | | Weekly | (40) % | (5) marks | |
| Sheets and Sketches | | Week (7-10-13) | (50) % | | |
| Researches and reports | | Week (15) | (10) % | | |
| Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (60) marks | |
| Total | | | | (100) marks | |

**12-List of references:**

| | |
|---|---|
| a. **Course notes** | • Student have to take written note based on the instructor's lecture<br>• Submission must be a periodical technical presentation.<br>• Final submission is A4 paper.<br>• The student has to report his own work through the current academic course.<br>• Printing and electronic versions of the report are required.<br>• The discussion and students' participants are very essential.<br>• The evaluations are internal periodical assessments.<br>• Student grades are available and posted in the class. |
| b. **Required books** | • Kerzner, H. and H.R. Kerzner, Project management: a systems approach to planning, scheduling, and controlling. John Wiley & Sons, 2017.<br>• Kalpakjian, S., K. Vijai Sekar, and S.R. Schmid, Manufacturing Engineering and technology. Pearson, 2014.<br>• Nigel J. Smith, "Engineering Project Management", 3rd Edition, Wiley-Blackwell, 2008. Crawford, Lynn. "Developing organizational project management capability: theory and practice." Project Management Journal 37.3 (2006): 74-86. |

| | |
|---|---|
| | • Kostof, Spiro. "A history of architecture: settings and rituals." New York: Oxford (1995). |
| c. **Recommended books** | • Student have to take written note based on the instructor's lecture<br>• Submission must be a periodical technical presentation.<br>• Final submission is A4 paper.<br>• The student has to report his own work through the current academic course.<br>• Printing and electronic versions of the report are required.<br>• The discussion and students' participants are very essential.<br>• The evaluations are internal periodical assessments.<br>• Student grades are available and posted in the class. |
| d. **Periodicals, Web sites, etc** | • Kerzner, H. and H.R. Kerzner, Project management: a systems approach to planning, scheduling, and controlling. John Wiley & Sons, 2017.<br>• Kalpakjian, S., K. Vijai Sekar, and S.R. Schmid, Manufacturing Engineering and technology. Pearson, 2014.<br>• Nigel J. Smith, "Engineering Project Management", 3rd Edition, Wiley-Blackwell, 2008. Crawford, Lynn. "Developing organizational project management capability: theory and practice." Project Management Journal 37.3 (2006): 74-86.<br>• Kostof, Spiro. "A history of architecture: settings and rituals." New York: Oxford (1995). |

## 13-Facilities required for teaching and learning:

- White board + colored pens
- Data show for presentation
- Google Class Room
- E-Learning
- References in library

## 14-Requirements for Disable facilities:

- On line teaching hours if it is needed
- Extra assignments

| | |
|---|---|
| **Course Instructor** | Dr. Ashraf Abdelkhalek |
| **Head of the Department** | Dr. Ashraf Abdelkhalek |
| **Date** | 2023/2024 |

5-CVEE422 Earthquake Engineering:

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 422 | Earthquake |

| A- Affiliation | |
|---|---|
| Relevant program: | Civil Engineering program |
| Department offering the program: | Civil Engineering program |
| Department offering the course: | Civil Engineering |
| Date of program operation: | 2008 -2009 |
| Date of approval from the Higher Ministry of education | 27/1/2008 |
| Date of course operation | 2023-2024 |

## B-Basic Information

| | |
|---|---|
| Title | Earthquake |
| Code | CVEE 422 |
| Credit Hours | 3 Cr. Hrs. |
| Lectures | 2 Hrs. |
| Tutorial | 2 Hrs. |
| pratical | 0Hrs. |
| Total | 4 Hrs. |
| Prerequisite | None |
| Instructor Name/Email | Dr.sameh yehia |

# C- Professional Information

## 1- Course Core

Introduction, Causes and effects of earthquakes, Quantification and magnitude of earthquakes, Factors affecting structural seismic response, Earthquake design philosophy and limit states, Determination of earthquake forces by code provisions, Free vibration analysis of multi-degrees of freedom systems, Response spectrum analysis of multi-degrees of freedom systems, Design response spectrum curves, Applications

| **2-Course Learning Objectives:** ( oc ) | |
|---|---|
| oc1 | This course presents the plain concrete and reinforced concrete system and design |
| oc2 | Learn road characteristics including geometry and structure |
| oc3 | Learn RC Design, Loads, and Design Codes. |
| oc4 | Learn skills to design structural and geometric structural components |
| oc5 | Acquire professional skills to design slabs to be durable and safe |
| oc6 | Applications on statically structure economic problems |
| oc7 | Knowing the modern structural techniques. |

| **3-program objectives served by the course:** ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O3 | Maintain the built environment with its social, economic and environmental aspects to achieve the 2030 sustainable development goals. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |
| O9 | Qualification to deal with the latest materials and systems that can transform engineering drawings into a real condition that meets the needs of the client and the era. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O1 |
| oc 2 | O1,O4 |
| oc 3 | O1,O2 |
| oc 4 | O1,O2,O4 |
| oc 5 | O1,O3,O4 |
| oc 6 | O2,O4 |
| oc 7 | O9 |

| 5- Program competencies served by the course: | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO21 | Conduct techniques and methods of investigation as researches and reports. |
| LO29 | Work efficiently as an individual and share in team works. |
| LO19 | Apply engineering design processes to produce cost-effective solutions that meet specified needs. |
| LO10 | Display relevant topics for Transportation and Traffic, Roadways and Airports, Railways, Sanitary Works, Irrigation, Water Resources and Harbors. |

**6- Learning outcomes of the course (LOs)**:

Upon the completion of the course the student should be able to:

| | |
|---|---|
| Lo1 | Identify and compute the design loads on a typical beam section. |
| Lo2 | Identify the principles of geometric and structural design of beam elements. |
| Lo3 | Select appropriate solutions for engineering problems based on analytical thinking |
| Lo4 | Integrate knowledge of mathematics, science, information technology, design, business context and engineering practice to solve engineering problems |
| Lo5 | Professionally merge the engineering knowledge, understanding, and feedback to improve geometric, intersections, and structural design of roadway. |
| Lo6 | Plan, design, construct, operate, control and carry out maintenance of all types of systems. |

| 7-The relation between the course learning outcomes and the program competencies | | |
|---|---|---|
| program competencies | | Course (Los) |
| 1 | LO21 | Lo1 |
| 2 | LO29 | Lo2 |
| 3 | LO10,LO19 | Lo3 |
| 4 | LO29 | Lo4 |
| 5 | LO10 | Lo5 |
| 6 | LO10,LO19 | Lo6 |

**7- Course Content and their to the course LOs**

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | Los |
|---|---|---|---|---|---|
| 1 | ***Introduction*** | 2 | 2 | 0 | Lo1 |
| 2 | ***Equivalent static load method*** | 2 | 2 | 0 | Lo2, Lo3 |
| 3 | ***Equivalent static load method*** | 2 | 2 | 0 | Lo2, Lo3 |
| 4 | ***Steps of Calculating Seismic Load.*** | 2 | 2 | 0 | Lo1, Lo6 |
| 5 | ***Earth quake example 1*** | 2 | 2 | 0 | Lo2 |
| 6 | ***Earth quake example 2*** | 2 | 2 | 0 | Lo2 |
| 7 | ***Revision*** | 2 | 2 | 0 | Lo1, Lo2, Lo3, Lo6 |
| 8 | **Mid-term exam** | 1 | | | Lo1, Lo2, Lo3, Lo6 |
| 9 | ***Wind Loads*** | 2 | 2 | 0 | Lo2 |
| 10 | ***Wind Load example 1*** | 2 | 2 | 0 | Lo2 |
| 11 | ***Systems resisting lateral loads*** | 2 | 2 | 0 | Lo4, Lo5 |
| 12 | ***Design of Shear wall*** | 2 | 2 | 0 | Lo4, Lo5 |
| 13 | ***Drift of structures due to seismic loads*** | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| **14** | ***Drift Examples*** | 2 | 2 | 0 | Lo2 |
| **15** | ***Revision*** | 2 | 2 | 0 | Lo1: Lo6 |
| **16** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 28 | 28 | 0 | |

**8- The Teaching and Learning Methods and their relation to the Los of the course**

| | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| **On line / face to face lectures** | | | | | | |
| **Tutorials: sheets/ sketches** | | | | | | |
| **projects** | | | | | | |
| **Problem solving** | | | | | | |
| **Brain storming** | | | | | | |
| **Practical: lab** | | | | | | |
| **discovering** | | | | | | |
| **Site visit** | | | | | | |
| **Reports/ researches** | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

## 9- Student assessment method

a. **Assessment method and its relation to the Los of the course**

| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

| 11- Grading System / Week | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Quizzes | Quiz ( 1 ) | Week (6) | | (5) marks | (40) marks |
| Discussions | | Weekly | (40) % | (5) marks | |
| Sheets and Sketches | | Week (7-10-13) | (50) % | | |
| Researches and reports | | Week (15) | (10) % | | |
| Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (60) marks | |
| Total | | | | (100) marks | |

| 12- List of references: | |
|---|---|
| a. **Course notes** | **Earthquake Engineering** |
| b. **Rquired books** | الكود المصري لتصميم المنشآت الخرسانية |
| c. **Recommended books** | N.A |
| d. **Periodicals, Web sites, etc** | N.A |

**13- Facilities required for teaching and learning:**

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- References in the library

**14- Requirements for Disable facilities:**

**None**

| | |
|---|---|
| **Course coordinator:** | **Dr.sameh yehia** |
| **Program Coordinator** | Civil Engineering |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

**6. CVEE 489 Selected topics in Civil and Environmental Engineering**

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 489 | Selected topics in Civil and Environmental Engineering |

## A- Affiliation

| | |
|---|---|
| Department offering the program: | Civil Engineering |
| Relevant program: | Civil Engineering |
| Department offering the course: | Civil Engineering |
| Date of program operation: | 2009-2010 |
| Date of approval from the Higher Ministry of Education | 27/1/2008 |
| Date of course operation | 2023-2024 |

## B-Basic Information

| | |
|---|---|
| Title | Selected topics in Civil and Environmental Engineering |
| Code | CVEE 489 |
| Credit Hours | 3 Cr. Hrs. |
| Lectures | 3 Hrs. |
| Tutorial | 0Hrs |
| practical | 0Hrs. |
| Total | 4 Hrs. |
| Prerequisite | CVEE 312 |
| Instructor name | Dr.Ashraf Abdel khalek Mostafa |

# C- Professional Information

## 1-Course core:

Selected topics in civil and environmental engineering (public projects in the Egyptian state that serve citizens - national projects that serve the state) - new methods of development and treatment - dynamic effects of facilities.

| 2-Course Learning Objectives: ( oc ) | |
|---|---|
| Oc1 | Selected topics in civil and environmental engineering |
| Oc2 | Public projects in the Egyptian state serve citizens |
| Oc3 | National projects that serve the state |
| Oc4 | New methods of development |
| Oc5 | New methods of treatment and Dynamic effects of facilities. |

| 3-Program objectives served by the course: (o) | |
|---|---|
| Upon the completion of the course, the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O3 | Maintain the built environment with its social, economic and environmental aspects to achieve the 2030 sustainable development goals. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |
| O8 | Gain experience in effective communication with the surrounding community. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O1, O3 |
| oc 2 | O3, O8 |
| oc 3 | O3, O8 |
| oc 4 | O1, O2 |
| oc 5 | O4 |

| 5- Program competencies served by the course: | |
|---|---|
| Upon the completion of the course, the student should be able to: | |
| LO30 | Communicate to convey ideas verbally, numerically, graphically, and using symbols effectively with a range of audiences. |
| LO7 | State the factors affecting the engineering projects. |
| LO23 | Use contemporary tools to implement engineering design drawings, and presentations. |
| LO12 | assess environmental impacts of projects. |
| O28 | integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery. |

| 6- Learning outcomes of the course (Los) | |
|---|---|
| Upon the completion of the Program, the student should be able to: | |
| Lo1 | Practice research techniques and methods of investigation as an inherent part of learning. |
| Lo2 | Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements. |
| Lo3 | Acquire and apply new knowledge; and practice self, lifelong and other learning strategies. |
| Lo4 | Plan and manage construction processes; address construction defects, instability and quality issues; maintain safety measures in construction and materials; and assess environmental impacts of projects. |
| Lo5 | Deal with biddings, contracts and financial issues including project insurance and guarantees. |

| 7-The relation between the course learning outcomes and the program competencies | | |
|---|---|---|
| program competencies | | Course (Los) |
| 1 | LO30 | Lo1 |
| 2 | LO7 | Lo2 |
| 3 | LO23 | Lo3 |
| 4 | LO12 | Lo4 |
| 5 | O28 | Lo5 |

**7- Course Content and they're to the course LOs**

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | LOs |
|---|---|---|---|---|---|
| 1 | Project definition and work breakdown structure. | 2 | 2 | 0 | Lo1 |
| 2 | Scheduling and control model techniques. | 2 | 2 | 0 | Lo2, Lo3 |
| 3 | The nature of the project, its components and forms. | 2 | 2 | 0 | Lo2, Lo3 |
| 4 | Resources of construction projects. | 2 | 2 | 0 | Lo1 |
| 5 | Scheduling of project activities. | 2 | 2 | 0 | Lo2 |
| 6 | Resource allocation and leveling optimal schedules. | 2 | 2 | 0 | Lo2 |
| 7 | Documentation and reporting. Quiz (1) | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| 8 | **Mid-term exam (Progress in Project Presentation)** | 1 | | | Lo1, Lo2, Lo3 |
| 9 | Time and cost control. | 2 | 2 | 0 | Lo2 |
| 10 | Progress monitoring and evaluation. | 2 | 2 | 0 | Lo2 |
| 11 | Risk analysis Managements. | 2 | 2 | 0 | Lo4, Lo5 |

| | | | | | |
|---|---|---|---|---|---|
| 12 | Value engineering for construction projects. | 2 | 2 | 0 | Lo4, Lo5 |
| 13 | Computer applications | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| **14** | Applications of primavera projects | 2 | 2 | 0 | Lo2 |
| **15** | Quiz (2) | 2 | 2 | 0 | Lo1: Lo6 |
| **16** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 28 | 28 | 0 | |

## 8- The Teaching and Learning Methods and their relation to the Los of the course

| Course learning Outcomes (LOs) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| On line / face to face lectures | | | | | | |
| Tutorials: sheets/ sketches | | | | | | |
| projects | | | | | | |
| Problem solving | | | | | | |
| Brain storming | | | | | | |
| Practical: lab | | | | | | |
| discovering | | | | | | |
| Site visit | | | | | | |
| Reports/ researches | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.

- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

**9- Student assessment method**

**a- Assessment method and its relation to the Los of the course**

| Course ILOs | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

**11- Grading System / Week**

| Content | Time schedule of assessment | | Marks | | |
|---|---|---|---|---|---|
| Quizzes | Quiz ( 1 ) | Week (14) | | (5) marks | (40) marks |
| | Quiz ( 2 ) | Week (15) | | (5) marks | |
| Discussions | | Weekly | (100) % | (5) marks | |
| Sheets and Sketches | | | (0) % | | |
| Researches and reports | | | (0) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |

| | | | | | |
|---|---|---|---|---|---|
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (15) marks | |
| final exam | | Week (16) | | (60) marks | |
| Total | | | | (100) marks | |

## 12- List of references:

| | |
|---|---|
| **a- Course Notes** | Lecturer Notes |
| **b- required books** | **– المؤتمر العربى للترميم و اعادة تاهيل المنشآت محمد ابراهيم سليمان مركز القاهرة الدولى للمؤتمرات – مدينة نصرادارة مشروعات التشييد إبراهيم عبد الرشيد دار النشر للجامعات**<br>**– engineering properties joseph E. bowler Ins 0007-11292109** |
| **c- periodicals, Web sites, etc** | **N.A** |

## 13- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google Classroom
- E-learning

## 14-Requirements for Disable facilities:

- Online teaching hours if it is needed
- Extra assignments

| | |
|---|---|
| **Course coordinator:** | **Professor. Dr.Ashraf Abdel Khalek Mostafa** |
| **program coordinator** | **Civil Engineering** |
| **Head of the Department** | **Professor. Dr.Ashraf Abdel khalek Mostafa** |
| **Date:** | **2023/2024** |

## 7-Senior Project 2 (Construction Managements)

## Course Specifications

| Course Code: | Course Name |
|---|---|
| CVEE 491 | Senior Project 2 (Construction Managements) |

### A- Affiliation

| | |
|---|---|
| Relevant program: | - |
| Department offering the program: | Civil Engineering |
| Department offering the course: | Civil Engineering |
| Date of program operation: | 2009-2010 |
| Date of approval from the Higher Ministry of education | 27/1/2008 |
| Date of course operation | 2023-2024 |

### B- Basic Information

| | |
|---|---|
| Title | Senior Project 2 (Construction Managements) |
| Code | CVEE 206 |
| Credit Hours | 2 Cr. Hrs. |
| Lectures | 1 Hrs. |
| Tutorial | 3 Hrs. |
| practical | 0 Hrs. |
| Total | 4 Hrs. |
| Prerequisite | N/A |
| Instructor name/Email | Dr. Hani Ibrahim |

## C- Professional Information

## 1-Course Core

An applied capstone project. Continuation of senior project I topics is encouraged. Actual construction projects are selected by groups of students upon advisors' approval for analysis. The management and technology aspects of construction are simulated and investigated.

| **2-Course Learning Objectives:** ( oc ) | |
|---|---|
| oc1 | Project definition and work breakdown structure. |
| oc2 | Scheduling and control model techniques. |
| oc3 | Resource allocation and leveling optimal schedules. |
| oc4 | Time and cost control. |
| oc5 | Making cash flow of structural projects considering sensitivity and risk analysis. |
| oc6 | Computer applications progress monitoring and evaluation. |

| **3-program objectives served by the course:** ( o ) | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| O1 | Develop students' creative and imaginative skills in the design process. |
| O2 | Develop students' abilities to develop strategies to solve societal problems. |
| O4 | Training students on projects that adopt a solution to contemporary societal problem based on various civil designs and construction applications and coping with the standards and the legislations. |
| O7 | Developing students' skills in employing modern computer programs in the analyses process , design, and the modelling process. |
| O8 | Students gain experiences in effective communication with the surrounding community. |
| O9 | preparing the student to deal with the latest materials and systems that can transform the drawings to real contexts fulfilling the needs of the client and the era. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O2 ,O8 |
| oc 2 | O1,O9 |
| oc 3 | O2 ,O4 |
| oc 4 | O1,O2 |
| oc 5 | O2 |
| oc 6 | O7,O9 |

| **5- Program competencies served by the course:** | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO5 | Display global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development. |
| Lo20 | Use contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements. |
| LO32 | Acquire entrepreneurial and leadership skills to anticipate and respond to new situations. |
| LO14 | Predict the knowledge of industries, organizations, regulations and procedures involved. |
| LO13 | Classify the constraints of: project financing, project management, cost control and methods of project delivery. |

| **6- Learning outcomes of the course (LOs)**: | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Identify projects and work breakdown structure. |
| Lo2 | Illustrate processes of management constructions. |
| Lo3 | Study the wordbreak down of structures during computer applications. |
| Lo4 | Impact of risk analysis management on mega projects. |

| | |
|---|---|
| Lo5 | Define worth of investments and economic evaluation of alternative choices, inflation, international contracts and bidding. |
| Lo6 | Develop risk analysis management and BIM technology for structures. |

| **7-The relation between the course learning outcomes and the program competencies** | | |
|---|---|---|
| | **program competencies** | **Course (Los)** |
| **1** | LO5 | Lo1 |
| **2** | Lo20 | Lo2 |
| **3** | LO32 | Lo3 |
| **5** | LO14 | Lo4 |
| **6** | LO13 | Lo5 |

**7- Course Content and they're to the course LOs**

| **Week No.** | **Topic** | **Lecture hr.** | **Tutorial hr.** | **Practical hours** | **LOs** |
|---|---|---|---|---|---|
| 1 | Project definition and work breakdown structure. | 2 | 2 | 0 | Lo1 |
| 2 | Scheduling and control model techniques. | 2 | 2 | 0 | Lo2, Lo3 |
| 3 | The nature of the project, its components and forms. | 2 | 2 | 0 | Lo2, Lo3 |
| 4 | Resources of construction projects. | 2 | 2 | 0 | Lo1 |
| 5 | Scheduling of project activities. | 2 | 2 | 0 | Lo2 |
| 6 | Resource allocation and leveling optimal schedules. | 2 | 2 | 0 | Lo2 |
| 7 | Documentation and reporting. Quiz (1) | 2 | 2 | 0 | Lo1, Lo2, Lo3 |

| | | | | | |
|---|---|---|---|---|---|
| 8 | **Mid-term exam (Progress in Project Presentation)** | 1 | | | Lo1, Lo2, Lo3 |
| 9 | Time and cost control. | 2 | 2 | 0 | Lo2 |
| 10 | Progress monitoring and evaluation. | 2 | 2 | 0 | Lo2 |
| 11 | Risk analysis Managements. | 2 | 2 | 0 | Lo4, Lo5 |
| 12 | Value engineering for construction projects. | 2 | 2 | 0 | Lo4, Lo5 |
| 13 | Computer applications | 2 | 2 | 0 | Lo1, Lo2, Lo3 |
| **14** | Applications of primavera projects | 2 | 2 | 0 | Lo2 |
| **15** | Quiz (2) | 2 | 2 | 0 | Lo1: Lo6 |
| **16** | **Final exam** | 2 | | | Lo1: Lo6 |
| **Total hours** | | 28 | 28 | 0 | |

**8- The Teaching and Learning Methods and their relation to the Los of the course**

| Course learning Outcomes (LOs) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| On line / face to face lectures | | | | | | |
| Tutorials: sheets/ sketches | | | | | | |
| projects | | | | | | |
| Problem solving | | | | | | |
| Brain storming | | | | | | |
| Practical: lab | | | | | | |
| discovering | | | | | | |
| Site visit | | | | | | |
| Reports/ researches | | | | | | |
| Cooperative work | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

**9- Student assessment method**

| **b- Assessment method and its relation to the Los of the course** | | | | | | |
|---|---|---|---|---|---|---|
| **Course lLOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

| **11- Grading System / Week** | | | | | |
|---|---|---|---|---|---|
| **Content** | **Time schedule of assessment** | | **Marks** | | |
| Quizzes | Quiz ( 1 ) | Week (7) | | (10) marks | (60) marks |
| | Quiz ( 2 ) | Week (15) | | (10) marks | |

| | | | | | |
|---|---|---|---|---|---|
| Discussions | | Weekly | (40) % | (10) marks | |
| Sheets and Sketches | | Week (7-10-13-15) | (50) % | | |
| Researches and reports | | | (10) % | | |
| the Projects | | | (0) % | | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | (10) marks | |
| Mid-term exam | | Week (8) | | (20) marks | |
| final exam | | Week (16) | | (40) marks | |
| Total | | | | (100) marks | |

| **12- List of references:** | |
|---|---|
| **a- Course notes** | -The importance of feasibility studies for projects , The conceptual estimation report , Time adjustment , location adjustment , size adjustment and forecast cost estimation, |
| **b- Required books** | -Construction project management, Prof.Dr. Ibrahim Abdul Rashid Nosier<br><br>-Project evaluation and feasibility analysis by Kevin baker.<br><br>-Financial feasibility studies for property development theory and practice TIMHAVARD. |
| **c- Recommended books** | - Feasibility study, project management, professional pm wiring note book |
| **d- Periodicals, Web sites, etc** | - https://www.researchgate.net/publication/341134813_A_PRACTICAL_GUIDE_TO_WRITING_A_FEASIBILITY_STUDY |

**13- Facilities required for teaching and learning:**

- Appropriate teaching design studios including presentation board, data show
- Google classroom

- References in the library

| **14- Requirements for Disable facilities:** |
|---|
| • On line teaching hours if it is needed<br>• Extra assignments |

| | |
|---|---|
| **Course Instructor** | **Dr. Hani Ibrahim** |
| **Head of the Department** | Dr. Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

**7-Senior Project 2 (concrete design):**

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 491 | Project Reinforced Concrete Design |

## A- Affiliation

| | |
|---|---|
| Department offering the program: | Civil Engineering |
| Relevant program: | Civil Engineering |
| Department offering the course: | Civil Engineering |
| Date of program operation: | 2009-2010 |
| Date of approval from the Higher Ministry of Education | 27/1/2008 |
| Date of course operation | 2023-2024 |

## B-Basic Information

| | |
|---|---|
| Title | Project Reinforced Concrete Design |
| Code | CVEE 491 |
| Credit Hours | 2 Cr. Hrs. |
| Lectures | 1 Hrs. |
| Tutorial | 3 Hrs. |
| practical | 0 Hrs. |
| Total | 4 Hrs. |
| Prerequisite | CVEE 490 |
| Instructor name/Email | Dr. Hani Ibrahim |

## C- Professional Information

### 1-Course core:

**Properties of plain concrete and reinforced concrete, behavior of composite sections, ultimate strength and working stress, design of structural elements, beams (Simple beams, continuous beams, cantilever beams), columns, frame,tanks, detailing of reinforcing steel.**

| 2-Course Learning Objectives: ( oc ) | |
|---|---|
| Oc1 | Know what is reinforced concrete. |
| Oc2 | Compute the loads acting on beams using load distribution. |
| Oc3 | Apply first principal equations for beam design. |
| Oc4 | Apply limit state method for beam design. |
| Oc5 | Know how to design columns, frames, tanks and beam by using a softwere program. |

| 3-Program objectives served by the course: (o) | |
|---|---|
| Upon the completion of the course, the student should be able to: | |
| O1 | Being creativity and imagine in the design process. |
| O2 | Apply strategies to solve societal problems. |
| O3 | Maintain the built environment with its social, economic and environmental aspects to achieve the 2030 sustainable development goals. |
| O4 | Implementing projects that adopt a solution to a contemporary societal problem that depends on various civil designs and construction applications and keeping pace with Cods and legislation. |

| 4-The relation between the course objectives and the program objectives | |
|---|---|
| **Course objectives** | **program objectives** |
| oc1 | O1, O2 |
| oc 2 | O1 |

| | |
|---|---|
| oc 3 | O1-O3 |
| oc 4 | O3 |
| oc 5 | O2, O4 |

| **5-Learning outcomes of the programs (LOs)**: | |
|---|---|
| Upon the completion of the course the student should be able to: | |
| LO5 | Display global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development. |
| Lo20 | Use contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements. |
| LO32 | Acquire entrepreneurial and leadership skills to anticipate and respond to new situations. |
| LO14 | Predict the knowledge of industries, organizations, regulations and procedures involved. |
| LO13 | Classify the constraints of: project financing, project management, cost control and methods of project delivery. |

| **6- Learning outcomes of the course (Los):** | |
|---|---|
| Upon the completion of the Program the student should be able to: | |
| Lo1 | Design of reinforced concrete Hollow block slabs (one-way and two-way slabs |
| Lo2 | Identify and compute the design of Domes and cones. |
| Lo3 | Design of paneled beam slabs, and design of flat slabs. |
| Lo4 | Study the design of paneled shells, folded plates, and, verendil structures) |
| Lo5 | Understanding different types of tanks. |

| | |
|---|---|
| Lo6 | Behavior of reinforced concrete water sections applied to flexural moment and/or normal compression force. |

**7-The relation between the course learning outcomes and the program competencies:**

| | program competencies | Course (Los) |
|---|---|---|
| **1** | LO5 | Lo1 |
| **2** | LO23 | Lo2 |
| **3** | LO32 | Lo3 |
| **4** | LO23 | Lo4 |
| **5** | LO28 | Lo5 |

**8- Course Content and they're to the course LOs**

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | Los |
|---|---|---|---|---|---|
| 1 | Introduction of project | 1 | 3 | 0 | Lo1 |
| 2 | Design of section using the First principal (over and under reinforcement) | 1 | 3 | 0 | Lo2 |
| 3 | Statical system | 1 | 3 | 0 | Lo1,lo2 |
| 4 | Statical system | 1 | 3 | 0 | Lo2 |
| 5 | Beam and slab design using the ETAB and SAFE program | 1 | 3 | 0 | Lo1,lo2 |
| 6 | column design using the ETAB program | 1 | 3 | 0 | Lo2 |
| 7 | Compared results between manual and program design | 1 | 3 | 0 | Lo1,lo2 |
| 8 | **Mid-term exam** | 20 | | | Lo1,lo3 |
| 9 | Reinforcement details for beam and column | 1 | 3 | 0 | lo24 |
| 10 | Design of frame | 1 | 3 | 0 | Lo3 |

| | | | | | |
|---|---|---|---|---|---|
| 11 | Solve frame in sap 2000 | 1 | 3 | 0 | Lo5 |
| 12 | Design of tank | 1 | 3 | 0 | Lo3,lo4 |
| 13 | Solve tank in sap 2000 | 1 | 3 | 0 | Lo5 |
| **14** | Reinforcement details for frame and tank | 1 | 3 | 0 | Lo4,lo5 |
| **15** | Discuss of results | 1 | 3 | 0 | Lo1,Lo6 |
| **16** | Discuss project graduate | 50 | | | Lo1,Lo6 |
| **Total hours** | | 28 | 42 | 0 | |

**9- The Teaching and Learning Methods and their relation to the Los of the course**

| Course learning Outcomes (LOs) / Teaching and Learning Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
|---|---|---|---|---|---|---|
| On line / face to face lectures | | | | | | |
| Tutorials: sheets/ sketches | | | | | | |
| projects | | | | | | |
| Problem solving | | | | | | |
| Brain storming | | | | | | |
| Practical: lab | | | | | | |
| discovering | | | | | | |
| Site visit | | | | | | |
| Reports/ researches | | | | | | |
| Cooperative work | | | | | | |
| presentation | | | | | | |
| Discussion | | | | | | |
| modelling | | | | | | |
| Notes | | | | | | |

- The research concerns the cooperative work, the discussion, the site visit and the presentations.
- The Tutorials concerns the brain storming and the problem solving.
- Online lectures used as hybrid learning , but in case of totally on line learning all the used teaching and learning methods will be on line.

**10- Student assessment method**

| c- Assessment method and its relation to the Los of the course | | | | | | |
|---|---|---|---|---|---|---|
| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 |
| quizzes | | | | | | |
| Mid -term exam | | | | | | |
| Final exam | | | | | | |
| sheets/ sketches | | | | | | |
| projects | | | | | | |
| Practical: lab | | | | | | |
| Oral exam | | | | | | |
| discussions | | | | | | |
| Reports/ researches | | | | | | |
| presentation | | | | | | |
| modelling | | | | | | |

**11- Grading system / Week**

| Content | Time schedule of assessment | | Marks | | |
|---|---|---|---|---|---|
| Quizzes | | Week () | | (10) marks | (60) marks |
| | | Week () | | (10) marks | |
| Discussions | | Weekly | (50) % | (10) marks | |
| Sheets and Sketches | | Week () | (20) % | | |
| Researches and reports | | | (30) % | | |

| | | | | | |
|---|---|---|---|---|---|
| the Projects | | | () % | | |
| Practical modelling | | | (0) % | (10) marks | |
| Attendance | | weekly | | | |
| Mid-term exam | | Week () | | (20) marks | |
| final exam | | Week (16) | | (40) marks | |
| Total | | | | (100) marks | |

| 12- List of references: | |
|---|---|
| **a- CourseNotes** | |
| **b- requiredd books** | Design of Reinforced Concrete Structure - Volume 1,2,3 - Prof. Mashhour Ghoneim & Prof. Mahmoud El-Mihilmy.2012 |
| **c- recommended books** | Egyptian Code design for reinforced concrete2020. |
| **d- periodicals, Web sites, etc** | |

## 13- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google Classroom
- E-learning

## 14- Requirements for Disable facilities:

- Online teaching hours if it is needed
- Extra assignments

| | |
|---|---|
| **Course coordinator:** | **Dr. Hani Ibrahim** |
| **program coordinator** | Civil Engineering |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023/2024 |

# Course Specification

| Course Code: | Course Name |
|---|---|
| CVEE 491 | Project strength and testing of materials (Senior2) |

## A- Affiliation

| | |
|---|---|
| Department offering the program: | Civil Engineering |
| Relevant program: | Civil Engineering |
| Department offering the course: | Civil Engineering |
| Date of program operation: | 2009-2010 |
| Date of approval from the Higher Ministry of Education | 27/1/2008 |
| Date of course operation | 2023-2024 |

## B-Basic Information

| | |
|---|---|
| Title | Project strength and testing of materials |
| Code | CVEE 491 |
| Credit Hours | 2 Cr. Hrs. |
| Lectures | 1 Hrs. |
| Tutorial | 3 Hrs. |
| Total | 4 Hrs. |
| Prerequisite | CVEE 490 |
| Instructor name/Email | Professor. Hany Ibrahim<br>Hani.ibrahim@sva.edu.eg |

## Professional Information

- **Course core:**

- **Concrete industry**
- **Properties and strength of engineering materials.**
- **Properties of fresh and hardened concrete.**
- **Concrete mix design**
- **The different experiments for materials and concrete**
- **Special types of concrete**
- **Durability of concrete**

### 3- Course Learning Objectives: ( oc )

| | |
|---|---|
| Oc1 | Identify the properties of engineering materials |
| Oc2 | Demonstrate the mechanical behavior of materials under tension, compression and flexure |
| Oc3 | Design concrete mix using different codes |
| Oc4 | Clarify pproperties and testing of fresh and hardened concrete. |
| Oc5 | Conduct the different experiments of materials, fresh and hardened concrete |

### 4- Program objectives served by the course: (o)

Upon the completion of the course, the student should be able to:

| | |
|---|---|
| O1 | Solve and apply equations and problems to reach an effective solution to serve the community |
| O2 | Developing the spirit of creativity in concrete mix design and implementation to participate in national construction project |
| O3 | Gain experience in dealing with different concrete mixtures |

### 5- The relation between the course objectives and the program objectives

| | Course objectives | program objectives |
|---|---|---|
| 1 | oc1 | O1, O2 |

| | | |
|---|---|---|
| 2 | oc 2 | O1 |
| 3 | oc 3 | O1-O3 |
| 4 | oc 4 | O3 |
| 5 | oc 5 | O2, O3 |

## 6- Learning outcomes of the course (Los)

Upon the completion of the course, the student should be able to:

| | |
|---|---|
| Lo1 | Select appropriate type of engineering materials for specific application. |
| Lo2 | Select the appropriate technique, tools & components to implement the project. |
| Lo3 | Identify the basic properties that characterize the behavior of engineering materials. |
| Lo4 | Understand the types of loading that materials should be withstand. |
| Lo5 | Perform all experiments of fresh and hardened concrete |
| Lo6 | Design concrete mix |
| Lo7 | Conduct experiments and discuss and analysis data |
| Lo8 | Work both independently and as part of a team |

## 7- Program competencies served by the course: (LOs)

Upon the completion of the Program, the student should be able to:

| | |
|---|---|
| LO8 | Select appropriate and sustainable technologies for the construction of buildings, infrastructures and water structures |
| LO19 | Apply engineering design processes to produce cost-effective solutions that meet specified needs. |
| Lo23 | Use contemporary tools to implement engineering design drawings, and presentations. |

| | |
|---|---|
| LO28 | integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery |
| LO30 | Communicate to convey ideas verbally, numerically, graphically, and using symbols effectively with a range of audiences |
| LO31 | Use creative, innovative and flexible thinking |
| LO32 | Acquire entrepreneurial and leadership skills to anticipate and respond to new situations. |

## 8- The relation between the course learning outcomes and the program competencies

| | Course (LOs) | program competencies |
|---|---|---|
| 1 | Lo1 | LO8 , LO19 |
| 2 | Lo2 | LO8 , LO19 |
| 3 | Lo3 | LO28-LO30-LO31 |
| 4 | Lo4 | LO28-LO30-LO31 |
| 5 | Lo5 | LO8- LO28-LO30-LO31 |
| 6 | Lo6 | LO8- LO19- LO28-LO31 |
| 7 | Lo7 | LO8- LO19- LO28-LO30-LO31 |
| 8 | Lo8 | LO8- LO19- LO30-LO31 |

## 7- Course Content and they're to the course Los

| Week No. | Topic | Lecture hr. | Tutorial hr. | Practical hours | Los |
|---|---|---|---|---|---|
| 1 | Revision, Literature, and searching | 1 | 3 | 0 | Lo1, Lo2 |
| 2 | Selecting project topic | 1 | 3 | 0 | Lo1, Lo2 |
| 3 | Projects objectives | 1 | 3 | 0 | Lo1, Lo2 |
| 4 | Selecting and testing of Material | 1 | 3 | 0 | Lo1, Lo3 |

| | | | | | |
|---|---|---|---|---|---|
| 5 | Mix design | 1 | 3 | 0 | Lo6 |
| 6 | Experimental program layout | 1 | 3 | 0 | Lo2 |
| 7 | Performing the experimental program | 1 | 3 | 0 | Lo5, Lo7 |
| 8 | **First Presentation** | **First presentation** | | | |
| 9 | Performing the experimental program | 1 | 3 | 0 | Lo4, Lo5, Lo7 |
| 10 | | 1 | 3 | 0 | Lo4, Lo5, Lo7 |
| 11 | | 1 | 3 | 0 | Lo4, Lo5, Lo7 |
| 12 | | 1 | 3 | 0 | Lo4, Lo5, Lo7 |
| 13 | | 1 | 3 | 0 | Lo4, Lo5, Lo7 |
| **14** | Discussion, analyses of results and conclusion | 1 | 3 | 0 | Lo7: Lo8 |
| **15** | | 1 | 3 | 0 | Lo7: Lo8 |
| **16** | **Final presentation** | **Final presentation** | | | |
| **Total hours** | | 14 | 42 | 0 | 0 |

**8- The Teaching and Learning Methods and their relation to the Los of the course**

| Course learning Outcomes / Teaching and Learning (LOs) Methods | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 | Lo7 | Lo8 |
|---|---|---|---|---|---|---|---|---|
| **Online / face-to-face lectures** | | | | | | | | |
| **Tutorials: sheets/ sketches** | | | | | | | | |
| **projects** | | | | | | | | |
| **Problem-solving** | | | | | | | | |
| **Brainstorming** | | | | | | | | |
| **Practical: lab** | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **discovering** | | | | | | | | |
| **Site visit** | | | | | | | | |
| **Reports/ researches** | | | | | | | | |
| Cooperative work | | | | | | | | |
| presentation | | | | | | | | |
| Discussion | | | | | | | | |
| modeling | | | | | | | | |

Notes

- The research concerns the cooperative work, the discussion, the site visit, and the presentations.
- The Tutorials concern brainstorming and the problem-solving.

Online lectures are used as hybrid learning, but in the case of totally online learning, all the used teaching and learning methods will be online.

**9- Student assessment method**

| **d- Assessment method and its relation to the Los of the course** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Course ILOs** | Lo1 | Lo2 | Lo3 | Lo4 | Lo5 | Lo6 | Lo7 | Lo8 |
| quizzes | | | | | | | | |
| Mid-term exam | | | | | | | | |
| Final exam | | | | | | | | |
| sheets/ sketches | | | | | | | | |
| projects | | | | | | | | |
| Practical: lab | | | | | | | | |
| Oral exam | | | | | | | | |
| discussions | | | | | | | | |
| Reports/ researches | | | | | | | | |
| presentation | | | | | | | | |
| modeling | | | | | | | | |

| Content | Time schedule of assessment | | Marks | | |
|---|---|---|---|---|---|
| Quizzes | | Week () | | () marks | (60) marks |
| | | Week () | | () marks | |
| Discussions | | Weekly | (50) % | (20) marks | |
| Sheets and Sketches | | Week () | (20) % | | |
| Researches and reports | | | (30) % | | |
| the Projects | | | () % | ( 20)marks | |
| Practical modelling | | | (0) % | | |
| Attendance | | weekly | | | |
| First Presentation | | Week () | | (20) marks | |
| Final presentation | | Week (16) | | (40) marks | |
| Total | | | | (100) marks | |

## 10- List of references:

| | |
|---|---|
| **e- Course Notes** | |
| **f- required books** | Egyptian Code of practice for Concrete structures. |
| **g- recommended books** | d- NEVILLE, A.M., "Properties of Concrete", Longman, 5th ed., 2013.<br>e- Nkrishna Raju." Design of concrete mixes", New Delhi, 5nd ed.,2014.<br>f- Shackelford, James f.," Introduction to materials science for engineers", Pearson Education, 7th ed., 2009. |
| **h- periodicals, Web sites, etc** | **EKB** |

## 13- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google Classroom
- E-learning

## 14- Requirements for Disable facilities:

- Online teaching hours if it is needed
- Extra assignments

| | |
|---|---|
| **Course coordinator:** | **Dr. Hany Ibrahim** |
| **program coordinator** | Dr.Ashraf Abdel khalek Mostafa |
| **Head of the Department** | Dr.Ashraf Abdel khalek Mostafa |
| **Date:** | 2023-2024 |