# Course Specification

**Course Code: ARE 1102** **Course Title: Visual Design & Design Fundamentals**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering | | | |
| **Department offering the program** | Architecture Engineering | | | |
| **Department offering the course** | Architecture Engineering | | | |
| **Course Code** | ARE 1102 | | | |
| **Year/level** | First year /Second level | | | |
| **Specialization** | **Major** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 2 | 5 | - | 7 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Train the students for innovative and creative thinking, describing and solving design problems and requirements (AM2.1) |
| 2 | Use aesthetic methods and principles that ensure meeting the needs of present and future generations in terms of social aspects (AM2.2) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO21 | Create architectural, urban and planning designs that meet aesthetic and technical requirements |
| CLO22 | use Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences |

## 4. Course Contents

| Topics | Week |
|---|---|
| Illustrated importance of forms and its principles | 1 |
| Studying Point as one of primary architecture elements (properties- uses in architecture). | 2 |
| Studying Line, Plane and Serial planes as one of primary architecture elements (properties- uses in architecture). | 3 |
| Studying Volume as one of primary architecture elements (properties- uses in architecture)+ Formative transformations of volumes | 4 |
| Formation using constructional vocabulary | 5 |
| Studying organization of Form & Space (Centralized -Linear -Radial - Clustered –Grid) | 6 |
| Designing principles and applying on small project | 8 |
| Designing Section and Elevation | 9 |
| How to make Chalet Plans (Zoning + Bubble diagrame + Plan) | 10 |
| How to make Chalet Sections - Elevation | 11 |
| All Project Observation | 12 |

| | |
|---|---|
| Semifinal Project | 13 |
| Final Project | 14 |

## 5. Teaching and Learning methods

| Course learning Outcomes (CLOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brain storm | E-Learning | Self-learning | Modeling and Simulation |
| CLO21 | √ | - | - | - | √ | √ | - | - | - | √ | √ | - |
| CLO22 | √ | √ | - | - | - | √ | - | - | - | √ | - | - |

## 6. Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | LOs |
|---|---|---|
| 1 | Written exam | CL21-CLO22 |
| 2 | Discussions | - |
| 3 | Mid Term Exam | CLO22 |
| 4 | Class works | CLO22 |
| 5 | Projects | CL21 |
| 6 | Researches | - |
| 7 | Reports | - |
| 8 | Presentations | CL21-CLO22 |
| 9 | Quiz | - |
| 10 | Skiz | - |

### 6.2 Assessment Schedule

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Written exam | 16 |
| 2 | Discussions | - |
| 3 | Mid Term Exam | 9 |
| 4 | Class works | Weekly |
| 5 | Projects | 15 |
| 6 | Researches | - |
| 7 | Reports | - |
| 8 | Presentations | Weekly |
| 9 | Quiz | - |
| 10 | Skiz | - |

### 6.3 Weighting of Assessments

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| Teacher Opinion | Class works | %60 | 60 | %20 | 20 |
| | Presentation | | | %5 | 5 |
| | Project | | | %15 | 15 |

| | | | | | |
|---|---|---|---|---|---|
| | Mid-term exam | | | %20 | 20 |
| **Final Exam** | Written exam | %40 | 40 | %40 | 40 |
| **Total** | | %100 | 100 | %100 | 100 |

## 7. List of References


- FRANCIS D. K. CHING, "FORM, SPACE, AND ORDER", Fourth Edition, 2020 ISBN: 9780471752165.
- FRANCIS D. K. CHING, "A Visual Dictionary of Architecture",2011, ISBN: 0470648856.
- STEVEN P. JUROSZEK, "Design Drawing", Third Edition, 2020, ISBN:978-1-119-50859-5


## 8. Facilities required for teaching and learning

| |
|---|
| Lecture/Classroom |
| White board |
| Data show |

## 9. Matrix of Course Content with Course LO's

| Topics | Aim | LO's |
|---|---|---|
| Illustrated importance of forms and its principles | 1 | CLO22 |
| Studying Point as one of primary architecture elements (properties- uses in architecture). | 1 | CLO22 |
| Studying Line, Plane and Serial planes as one of primary architecture elements (properties- uses in architecture). | 1 | CLO22 |
| Studying Volume as one of primary architecture elements (properties- uses in architecture)+ Formative transformations of volumes | 1 | CLO22 |
| Formation using constructional vocabulary | 1 | CLO22 |
| Studying organization of Form & Space (Centralized -Linear - Radial - Clustered –Grid) | 1 | CL21-CLO22 |
| Designing principles and applying on small project | 2 | CLO22 |
| Designing Section and Elevation | 2 | CL21-CLO22 |
| How to make Chalet Plans (Zoning + Bubble diagrame + Plan) | 2 | CLO22 |
| How to make Chalet Sections - Elevation | 2 | CL21-CLO22 |
| All Project Observation | 1& 2 | CL21-CLO22 |
| Semifinal Project | 1& 2 | CL21-CLO22 |
| Final Project | 1& 2 | CL21-CLO22 |

## 10. Matrix of Program LOs with Course LOs

| Program LOs | | Course LOs | |
|---|---|---|---|
| PLO11 | Create architectural, urban and planning designs that meet aesthetic and technical requirements using Adequate knowledge of history, related | CLO21 | Create architectural, urban and planning designs that meet aesthetic and technical requirements |

| | | | |
|---|---|---|---|
| | fine arts, culture, local heritage, technologies and human sciences. | CLO22 | use Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Dr. Hadeer Abdelsamie** | |
| **Head of Department** | **Associa. Prof. Reham Othman** | |
| **Date of Approval** | **17/9/2024** | |

**Course Specification**

**Course Code: ARE 1103 Course Title: Architectural Drawing & Representation Techniques**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering Department | | | |
| **Department offering the program** | Architecture Engineering Department | | | |
| **Department offering the course** | Architecture Engineering Department | | | |
| **Course Code** | **ARE 1103** | | | |
| **Year/level** | First year / Second Level | | | |
| **Specialization** | **Major** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 2 | 5 | 0 | 7 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Provide the students with modern academic and technical skills .(AM3.1) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO19 | Apply new knowledge in architectural projects. |
| CLO24 | Deal with the relation between people, buildings, and their surrounding environment |
| CLO25 | Produce designs with the scale of humanity and its needs |

## 4. Course Contents

| Topics | Week |
|---|---|
| Introduction and how to provide entry level visualization | 1 |
| How to communicate and design skills for a wide variety of fields | 2 |
| Principles of geometric projection in architectural drawings | 3 |
| Principles of architectural drawings (How to draw plans) | 4 |
| How to draw sections | 5 |
| How to draw elevations | 6 |
| How to draw lay out | 8 |
| Illustrate interior and furniture design for the building | 9 |
| Requirements and skills for free drawing and displaying architectural projects presentation | 10 |
| How to create the perspective of the project | 11 |
| Shade and Shadows and practice on simple elements | 12 |

| | |
|---|---|
| Practical application on full architecture project – final project | 13 |

## 5. Teaching and Learning methods

| Course learning Outcomes (CLOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brain storm | E-Learning | Self-learning | Modeling and Simulation |
| CLO19 | √ | √ | - | √ | √ | - | - | √ | - | √ | √ | - |
| CLO24 | √ | √ | - | √ | - | - | - | - | - | √ | √ | - |
| CLO25 | √ | √ | - | - | √ | - | - | √ | - | √ | - | - |

## 6. Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | CLOs |
|---|---|---|
| 1 | Written exam | CLO19-CLO24-CLO25 |
| 2 | Discussions | CLO19 – CLO25 |
| 3 | Mid Term Exam | CLO19-CLO24 |
| 4 | Class works | CLO19-CLO24-CLO25 |
| 5 | Projects | CLO19-CLO25 |
| 6 | Research | CLO19-CLO24 |

### 6.2 Assessment Schedule

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Written exam | 15 |
| 2 | Discussions | weekly |
| 3 | Mid Term Exam | 7 |
| 4 | Class works | weekly |
| 5 | Projects | 13 |
| 6 | Research | 9 |

### 6.3 Weighting of Assessments

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| Teacher Opinion | Discussions | 60 | 60 | 5 | 5 |
| | Mid-term exam | | | 20 | 20 |
| | Class works | | | 15 | 15 |
| | Projects | | | 15 | 15 |
| | Research | | | 5 | 5 |
| Final Exam | Written exam | 40 | 40 | 40 | 40 |
| Total | | 100 | 100 | 100 | 100 |

## 7. List of References


- Zell, Mo, "Architectural Drawing Course: Tools and Techniques for 2D and 3D Representation", 2nd Revised ed., Barron's Educational Series, UK, **2018.** ISBN:1438011156
- Edwards, Brian, "Understanding Architecture Through Drawing", 2nd Edition, Taylor & Francis, USA, **2009**. ISBN: 9780415444149
- محمد حلمي، "مبادئ الرسم والتصميم المعماري للمباني"، ط1، دار المراجع العلمية للنشر والتوزيع، مصر، **2021**.
- بهاء الدين برادة، ابراهيم نجيب، "الرسم المعماري – الجزء الأول"، وكالة الصحافة العربية، 2022، ISBN: 9789779915197
- ك. ديسي، ثوماس لاسويل، "الاعتبارات الإنسانية في التصميم المعماري"، دار جامعة الملك سعود للنشر، المملكة العربية السعودية، **2016**. رقم التسجيل: 161107
- محمد عبدالله، "الإظهار المعماري"، مكتبة الأنجلو المصرية، يناير **2000**. رقم التسجيل: 9789770511145


## 8. Facilities required for teaching and learning

| |
|---|
| Lecture/Classroom |
| White board |
| Data show |
| LMS |

## 9. Matrix of Course Content with Course LO's

| Topics | Aim | CLO's |
|---|---|---|
| Introduction and how to provide entry level visualization | 1 | CLO19 |
| How to communicate and design skills for a wide variety of fields | 1 | CLO19 |
| Principles of geometric projection in architectural drawings | 1 | CLO19-CLO24 |
| Principles of architectural drawings (How to draw plans) | 1 | CLO24-CLO25 |
| How to draw sections | 1 | CLO24-CLO25 |
| How to draw elevations | 1 | CLO24-CLO25 |
| How to draw lay out | 1 | CLO24-CLO25 |
| Illustrate interior and furniture design for the building | 1 | CLO19- CLO24-CLO25 |
| Requirements and skills for free drawing and displaying architectural projects presentation | 1 | CLO19-CLO24-CLO25 |
| How to create the perspective of the project | 1 | CLO19-CLO24-CLO25 |
| Shade and Shadows and practice on simple elements | 1 | CLO19-CLO24-CLO25 |
| Practical application on full architecture project – final project | 1 | CLO19-CLO24-CLO25 |

## 9. Matrix of Program LOs with Course Los

| Program Los | | Course Los | |
|---|---|---|---|
| PLO10 | Acquire and apply new knowledge; and practice self, lifelong and other learning strategies. | CLO19 | Apply new knowledge in architectural projects. |
| PLO12 | Produce designs that meet the requirements of building users by understanding the relationship between people and buildings, and between the buildings and their surrounding environment, with the necessity of linking the buildings and the spaces between them to the scale of humanity and its needs | CLO24 | Deal with the relation between people, buildings, and their surrounding environment |
| | | CLO25 | Produce designs with the scale of humanity and its needs |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Dr. Hadeel Mahmoud** | |
| **Head of Department** | **Assocc. Prof. Reham Othman** | |
| **Date of Approval** | **17/9/2024** | |

# Course Specification

**Course Code: ARE 1101** **Course Title: Building construction 1**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering | | | |
| **Department offering the program** | Architecture Engineering | | | |
| **Department offering the course** | Architecture Engineering | | | |
| **Course Code** | ARE 1101 | | | |
| **Year/level** | first year / Second Level | | | |
| **Specialization** | **Major** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 2 | 3 | - | 5 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Provide the students with the capacity to prepare flexible and ecologically responsible designs by understanding modern structural and technological designs. (AM5.1) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO 6 | Apply engineering design processes to produce cost-effective solutions. |
| CLO7 | Meet specified needs with consideration for global, cultural, social, economic, environmental, and ethical aspects. |
| CLO26 | Prepare environmentally responsible designs to preserve and rehabilitate the environment |
| CLO27 | choose the structural design, construction, technology used |

## 4. Course Contents

| Topics | Week |
|---|---|
| Define terms Of Buildings and its components | 1 |
| clear the main elements of the building and its foundations | 2 |
| Deep Foundations | 3 |
| Illustrated Building materials and building systems (bearing walls, skeleton) | 4 |

| | |
|---|---|
| Illustrated Building materials and building systems (shell construction and other new structural systems) | 5 |
| train the student to draw the constructional details | 6 |
| Architectural Bonds, Tools | 8 |
| Architectural Wall thickness, Openings. | 9 |
| Architectural Bonds, Openings. Lintels and arches | 10 |
| Architectural Building materials and types of finishes. | 11 |
| Architectural Bonds, Tools | 12 |
| Architectural Wall thickness, Openings. | 13 |
| Stairs and its type | 14 |

## 5. Teaching and Learning methods

| Course learning Outcomes (CLOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brain storm | E-Learning | Self-learning | Modeling and Simulation |
| CLO 6 | √ | - | - | - | - | - | - | √ | - | √ | - | - |
| CLO7 | √ | √ | - | - | - | - | - | √ | - | √ | - | - |
| CLO26 | √ | √ | - | - | - | - | - | √ | - | √ | - | - |
| CLO27 | √ | √ | - | - | - | - | - | √ | - | √ | - | - |

## 6.Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | Clos |
|---|---|---|
| 1 | Written exam | CLO7-CLO26-CLO27 |
| 2 | Discussions | CLO6-CLO7-CLO26-CLO27 |
| 3 | Mid Term Exam | CLO7-CLO26 |
| 4 | Class works | CLO7-CLO26-CLO27 |
| 5 | Projects | - |
| 6 | Researches | - |
| 7 | Reports | - |
| 8 | Presentations | - |
| 9 | Quiz | - |
| 10 | Skiz | - |

### 6.2 Assessment Schedule

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Written exam | 16 |

| | | |
|---|---|---|
| 2 | Discussions | Weekly |
| 3 | Mid Term Exam | 7 |
| 4 | Class works | Weekly |
| 5 | Projects | - |
| 6 | Researches | - |
| 7 | Reports | - |
| 8 | Presentations | - |
| 9 | Quiz | - |
| 10 | Skiz | - |

**6.3 Weighting of Assessments**

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| **Teacher Opinion** | Discussions | %60 | 60 | %5 | 5 |
| | Class works | | | %15 | 15 |
| | Mid-term exam | | | %20 | 20 |
| **Final Exam** | Written exam | %40 | 40 | %40 | 40 |
| **Total** | | %100 | 100 | %100 | 100 |

## 7. List of References


- DAVID CHAPELL & ANDREW WILLS,(2019)," The Architect in Practice "RIBA, New york, Wiley-Blackwell ,11TH Edition ISBN 13 978-1118907733 .
- Guedi Capeluto, Carlos Ernesto Ochoa,(2017), Intelligent Envelopes for High-Performance Buildings, Design and Strategy ,Springer Cham,1st Edition, ISBN13 978-3319392547.
- Wilhelm, N.E. (2014). Building Construction. In: Selin, H. (eds) Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures. Springer,6TH ed, Jones & Bartlett Learning,ISBN13 978-1284177312.
- Edward Allen , Joseph Iano(2019); Fundamentals of Building Construction: Materials and Methods , Wiley ,7th Edition,ISBN-13 978-1119446194.

.

- محمود احمد على,(2021), سلسلة دليلك فى عالم التنفيذ الجزء الاول والثانى ,دار الكتب العلمية للنشر والتوزيع, القاهرة.


## 8.Facilities required for teaching and learning

| |
|---|
| Lecture/ LMS |
| White board |
| Data show |

## 9.Matrix of Course Content with Course LO's

| Topics | Aim | LO's |
|---|---|---|
| Define terms Of Buildings and its components | 1 | CLO6-CLO7- CLO26 |
| clear the main elements of the building and its foundations | 1 | CLO6-CLO26 |
| Deep Foundations | 1 | CLO6-CLO26 |
| Illustrated Building materials and building systems (bearing walls, skeleton) | 1 | CLO6-CLO26 |
| Illustrated Building materials and building systems (shell construction and other new structural systems) | 1 | CLO6-CLO26 |
| train the student to draw the constructional details | 1 | CLO6-CLO7-CLO26 |
| Architectural Bonds, Tools | 1 | CLO6-CLO7-CLO26 |
| Architectural Wall thickness, Openings. | 1 | CLO6-CLO7-CLO27 |
| Architectural Bonds, Openings. Lintels and arches | 1 | CLO7-CLO26-CLO27 |
| Architectural Building materials and types of finishes. | 1 | CLO6-CLO7-CLO26-CLO27 |
| Architectural Bonds, Tools | 1 | CLO6-CLO7-CLO26-CLO27 |
| Architectural Wall thickness, Openings. | 1 | CLO6-CLO7-CLO26-CLO27 |
| Stairs and its type | 1 | CLO6-CLO7-CLO26 |

## 10. Matrix of Program LOs with Course Los

| Program LOs | | Course Los | |
|---|---|---|---|
| PLO3 | Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for 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. | CLO 6 | Apply engineering design processes to produce cost-effective solutions. |
| | | CLO7 | Meet specified needs with consideration for global, cultural, social, economic, environmental, and ethical aspects. |
| PLO13 | Preparing environmentally responsible designs to preserve and rehabilitate the environment through an understanding of the structural design, construction, technology used and associated engineering problems Building designs | CLO26 | Prepare environmentally responsible designs to preserve and rehabilitate the environment |
| | | CLO27 | choose the structural design, construction, technology used |

| Title | Name | Signature |
|---|---|---|

| | | |
|---|---|---|
| **Course coordinator** | **Dr. Hend Ali** |  |
| **Head of Department** | **Assocc. Prof. Reham Othman** |  |
| **Date of Approval** | **7/9/2024** | |

# Course Specification

**Course Code: ARE 1104** **Course Title: Theories of Architecture (1)**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture department | | | |
| **Department offering the program** | Architecture department | | | |
| **Department offering the course** | Architecture department | | | |
| **Course Code** | ARE 1104 | | | |
| **Year/Level** | First year /Second level | | | |
| **Specialization** | **Major** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 4 | - | - | 4 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Provide the students with modern academic and technical skills, cultural knowledge of history, fine arts, and local and international heritage (AM3.1) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO12 | Practice research techniques and methods of investigation as an inherent part of learning. |
| CLO22 | use Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences |

## 4. Course Contents

| Topics | Week |
|---|---|
| Illustrated Architecture definition, elements &Basics, Anthropometry Measurements | 1 |
| Elements of Architecture: utilization- Service - Movement (vertical- horizontal)- Lighting - construction -Ventilation– aesthetic- a process | 2 |
| HUMAN (Measurements & Anthropometry) & Residential unit spaces | 3 |
| Primary Elements: Point - Line -From Line to Plane -Planar Elements -Volumetric Elements | 4 |
| Form Primary Shapes -Primary Solids - Regular & Irregular Forms - Transformation of Form -Articulation of Form | 5 |
| Form & Space: Unity of Opposite- Form Defining Space) | 6 |
| Horizontal & Vertical Elements Defining Space | 7 |
| Organization: Organization of Form & Space (Spatial - Centralized - Linear - Radial - Clustered - Grid ) | 8 |
| Qualities of Architectural Space | 10 |
| Ordering Principles: (Axis -Symmetry -Hierarchy - Datum ) | 11 |
| Ordering Principles: (-Rhythm -Repetition -Transformation) | 12 |
| Proportion & Scale Theories of Proportion :( Golden Section-Classical Orders) | 13 |
| Proportion & Scale Theories of Proportion | 14 |
| Modular-Anthropometry-Scale) | 15 |

## 5. Teaching and Learning methods

| Course Learning Outcomes (Los) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brainstorm | E-Learning | Self-learning | Modeling and Simulation |
| CLO12 | | | - | √ | - | √ | | √ | √ | √ | | |
| CLO22 | √ | √ | - | √ | - | √ | | √ | | √ | √ | |

## 6. Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | LOs |
|---|---|---|
| 1 | Discussions | CLO12-CLO22 |
| 3 | Mid Term Exam | CLO22 |
| 4 | Researches | CLO12-CLO22 |
| 5 | Presentations | CLO12-CLO22 |
| 6 | Quiz | CLO22 |
| 7 | Written exam | CLO22 |

### 6.2 Assessment Schedule

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Discussions | weekly |
| 3 | Mid Term Exam | 9 |
| 4 | Researches | 4 & 12 |
| 5 | Presentations | 4 & 12 |
| 6 | Quiz | 3 & 11 |
| 7 | Written exam | 16 |

### 6.3 Weighting of Assessments

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| **Teacher Opinion** | Discussions | %50 | 50 | 5% | 5 |
| | Mid-term exam | | | 20% | 20 |
| | Researches | | | 10% | 10 |
| | Presentations | | | 10% | 10 |
| | Quiz | | | 5% | 5 |
| **Final Exam** | Written exam | %50 | 50 | %50 | 50 |
| **Total** | | %100 | 100 | %100 | 100 |

## 7. List of References

- Ch'ing, Francis D.K, Architecture Space, Form, and Order, 4th Edition2020. ISBN-13: 978-1118745083.
- Donald Watson (Author), Michael J. Crosbie (Author) (2004): Time Saver Standards for Architectural Design Data. Publisher: McGraw Hill ISBN-13: 978-0071432054.
- Emst Neufert Architects, Data, The Alden Group Ltd. Oxford and Northampton – (3rd Edition) – 2022
- K. Michael Hays (Editor2000), Architecture Theory since 1968. Publisher: The MIT Press, ISBN-13: 978-0262581882.


## 8. Facilities required for teaching and learning

| |
|---|
| Lecture hall |
| Whiteboard |
| LMS |
| Data show |

## 9. Matrix of Course Content with Course LO's

| Topics | Aim | LO's |
|---|---|---|
| Architecture definition &Basics, Anthropometry (HUMAN) Measurements | 1 | CLO22 |
| Elements of Architecture: utilization- Service - Movement (vertical- horizontal)- Lighting - construction -Ventilation– aesthetic- a process | 1 | CLO22 |
| HUMAN (Measurements & Anthropometry) & Residential unit spaces | 1 | CLO12- CLO22 |
| Primary Elements: Point - Line -From Line to Plane -Planar Elements -Volumetric Elements | 1 | CLO12- CLO22 |
| Form Primary Shapes -Primary Solids - Regular & Irregular Forms - Transformation of Form -Articulation of Form | 1 | CLO12- CLO22 |
| Form & Space: Unity of Opposite- Form Defining Space) | 1 | CLO12- CLO22 |
| Horizontal & Vertical Elements Defining Space | 1 | CLO12- CLO22 |
| Organization: Organization of Form & Space (Spatial - Centralized - Linear - Radial - Clustered - Grid ) | 1 | CLO22 |
| Qualities of Architectural Space | 1 | CLO22 |
| Ordering Principles: (Axis -Symmetry -Hierarchy - Datum ) | 1 | CLO22 |
| Ordering Principles: (-Rhythm -Repetition -Transformation) | 1 | CLO22 |
| Proportion & Scale Theories of Proportion :(Golden Section-Classical Orders) | 1 | CLO12- CLO22 |
| Proportion & Scale Theories of Proportion :(Modular-Anthropometry-Scale) | 1 | CLO12- CLO22 |

## 10. Matrix of Program LOs with Course LOs

| Program LOs | | Course LOs | |
|---|---|---|---|
| PLO5 | Practice research techniques and methods of investigation as an inherent part of learning. | CLO12 | Practice research techniques and methods of investigation as an inherent part of learning. |
| PLO11 | Create architectural, urban, and planning designs that meet aesthetic and technical requirements using Adequate knowledge of history, related fine arts, culture, local heritage, technologies, and human sciences. | CLO22 | use Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Assoc. Prof. Rania Badawy** | |
| **Head of Department** | **Assoc. Prof. Reham Osman** | |
| **Date of Approval** | **17/9/2024** | |

**Course Specification**

**Course Code:** CVE 1131 **Course Title:** Surveying

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering Program | | | |
| **Department offering the program** | Architecture Engineering department | | | |
| **Department offering the course** | Civil Engineering Department | | | |
| **Course Code** | CVE 1131 | | | |
| **Year/level** | first year / second level (1st Semester) | | | |
| **Specialization** | **Minor** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 2 | 2 | - | 4 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Use data analysis, objective engineering udgment, and simulation .(AM 1.1) |
| 2 | Train the students on how to use cadastral tools to determine site dimensions, innovative and creative thinking, describing and solving design problems and requirements (AM2.1) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO2 | Solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.by applying engineering fundamentals, basic science, and mathematics |
| CLO16 | Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools. |

## 4. Course Contents

| Topics | Week |
|---|---|
| Introduction to surveying and mapping: Historical background, definitions and branches of surveying science. | 1 |
| Measurements units, Map Scale | 2 |
| Direct and indirect methods of distance measurements by classical and electronic methods. | 3 |
| Directions and angles measurements using theodolites. computation of traverses. | 4 |
| Areas calculations (regular and irregular parcel shapes) by using mathematical, mechanical and graphical methods. | 5 |
| Introduction to vertical control. Different methods for height difference determination. | 6 |
| Ordinary levelling: survey level and survey staff. | 7 |

| | |
|---|---|
| Longitudinal levelling | 8 |
| cross section levelling | 10 |
| grid levelling and contour lines | 11 |
| Volume computations and earthwork | 12 |
| kinds and sources of errors in surveying measurement | 13-14 |
| Revisions | 15 |

## 5. Teaching and Learning methods

| Course learning Outcomes (CLOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brain storm | E-Learning | Self-learning | Modeling and Simulation |
| CLO2 | √ | √ | √ | √ | | √ | | | | √ | √ | |
| CLO16 | | | | | | √ | | | | √ | √ | |

## 6. Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | CLOs |
|---|---|---|
| 1 | Reports | CLO2,CLO15 |
| 2 | Quiz | CLO2 |
| 3 | Mid-term Exam | CLO15 |
| 4 | Presentations | CLO2,CLO16 |
| 5 | Written exam | CLO2,CLO15,CLO16 |

### 6.2 Assessment Schedule

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Reports | Bi-weekly |
| 2 | Quiz | 4 & 10 |
| 3 | Mid-term Exam | 9 |
| 4 | Presentations | 13 |
| 5 | Written exam | 16 |

| 6.3 Weighting of Assessments | | | | | |
|---|---|---|---|---|---|
| | **Assessment Method** | **Weights%** | **Weights** | **Weights%** | **Weights** |
| **Teacher Opinion** | Reports | 40% | 40 | 5% | 5 |
| | Presentations | | | 5% | 5 |
| | Quiz | | | 10% | 10 |
| | Mid-term exam | | | 20% | 20 |
| **Final Exam** | Written exam | 60% | 60 | 60% | 60 |
| **Total** | | 100% | 100 | 100% | 100 |

## 7. List of References

[1] De, Alak. *Plane Surveying*. S. Chand Publishing, 2000.

[2] Napoles, E., and M. Berber. "Precise formula for volume computations using contours method." *Boletim de Ciências Geodésicas* 24 (2018)

## 8. Facilities required for teaching and learning

| |
|---|
| Lecture/ |
| White board |
| Classroom |
| Data show |
| Laboratory Usage |

## 9. Matrix of Course Content with Course LO's

| Topics | Aim | CLOs |
|---|---|---|
| Introduction to surveying and mapping: Historical background, definitions and branches of surveying science. | 1,2 | CLO2 |
| Measurements units, Map Scale | 1 | CLO2,CLO16 |
| Direct and indirect methods of distance measurements by classical and electronic methods. | 1,2 | CLO2, CLO16 |
| Directions and angles measurements using theodolites. computation of traverses. | 2 | CLO2 |
| Areas calculations (regular and irregular parcel shapes) by using mathematical, mechanical and graphical methods. | 2 | CLO2, CLO16 |
| Introduction to vertical control. Different methods for height difference determination. | 2 | CLO2, CLO16 |
| Ordinary levelling: survey level and survey staff. | 1 | CLO16 |
| Longitudinal levelling | 1 | CLO16 |
| cross section levelling | 1,2 | CLO2 , CLO16 |

| | | |
|---|---|---|
| grid levelling and contour lines | 2 | CLO16 |
| Volume computations and earthwork | 2 | CLO16 |
| kinds and sources of errors in surveying measurement | 1,2 | CLO2 |
| Revisions | 1,2 | CLO2 ,CLO16 |

## 10. Matrix of Program LOs with Course Los

| Program LOs | | Course LOs | |
|---|---|---|---|
| PLO1 | Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics. | CLO2 | Solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.by applying engineering fundamentals, basic science, and mathematics. |
| PLO8 | Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools. | CLO16 | Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools. |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Dr. Ahmed Hamdy Ibrahim** | |
| **Head of Department** | **Assocc. Prof. Reham Othman.** | |
| **Date of Approval** | **7/10/2024** | |

Ministry of Higher Education
Higher Institute of Engineering and Technology
Architecture Eng. department

**Course Specification**

**Course Code: HUM 1302 Course Title: Technical reports writing**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering | | | |
| **Department offering the program** | Architecture Engineering | | | |
| **Department offering the course** | Architecture Engineering | | | |
| **Course Code** | HUM 1302 | | | |
| **Year/level** | First year /Second Level | | | |
| **Specialization** | Minor | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 2 | 1 | 0 | 3 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Prepare project documents, submit bids and purchase architectural services to produce projects. ( AM5.2) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO12 | Practice research techniques and methods of investigation as an inherent part of learning |
| CLO16 | Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools. |

## 4. Course Contents

| Topics | Week |
|---|---|
| Definition of technical writing and Overview of International Database for scientific research | 1 |
| Elements of Ethics in Scientific Writing and levels of plagiarism | 2 |
| Styles of writing | 3 |

| | |
|---|---|
| Steps of technical writing | 4 |
| Elements of technical writing | 5 |
| Paper Structure I | 6 |
| Paper Structure II | 8 |
| Structure of Figures | 9 |
| Structure of Tables | 10 |
| Abbreviations, Formatting | 11 |
| How to write References | 12 |
| Resume writing | 13 |

## 5. Teaching and Learning methods

| Course learning Outcomes (LOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research | Projects | Presentation | Site Visits | Discussion | Brain storm | E-Learning | Self-learning | Modeling and simulation |
| CLO12 | √ | - | - | - | - | - | - | - | - | √ | √ | - |
| CLO16 | √ | - | - | √ | - | - | - | - | - | - | √ | - |

## 6.Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | LOs |
|---|---|---|
| 1 | Mid Term Exam | CLO16 -CLO12 |
| 2 | Research | CLO16 |
| 3 | Final Exam | CLO16 -CLO12 |

### 6.2 Assessment Schedule

| No | Assessment Method | Weeks |
|---|---|---|
| 1 | Mid Term Exam | 7 |
| 2 | Research | 4,6,11,13 |
| 3 | Written Exam | 15 |

| 6.3 Weighting of Assessments | | | | | |
|---|---|---|---|---|---|
| | **Assessment Method** | **Weights%** | **Weights** | **Weights%** | **Weights** |
| **Teacher Opinion** | Mid Term Exam | 20 | 20 | 20 | 20 |
| | Research | 30 | 30 | 30 | 30 |
| **Final Exam** | Written exam | 50 | 50 | 50 | 50 |
| **Total** | | 100 | 100 | 100 | 100 |

## 7. List of References

[1] Morgan, K. & McCart A. (2015). Technical Writing Process. (3d Edition). Publisher : Technical Writing Process. ISBN-10 : 0994169310

[2] Alley,M. (2018). The Craft of Scientific Writing.(4th edition). Publisher : Springer. ISBN-10 : 1441982876

[3] Paul F. & Jeremy H.(2003)Writing Engineering Specifications (2nd Edition) Routledge. ISBN : 0415263026

## 8. Facilities required for teaching and learning

| |
|---|
| Lecture hall |
| White board |
| Data show |

## 9. Matrix of Course Content with Course LO's

| Topics | Aim | LO's |
|---|---|---|
| Definition of technical writing and Overview of International Database for scientific research | 1 | CLO12 -CLO16 |
| Elements of Ethics in Scientific Writing and levels of plagiarism | 1 | CLO16 |
| Styles of writing | 1 | CLO16 |
| Steps of technical writing | 1 | CLO12 -CLO16 |
| Elements of technical writing | 1 | CLO12 -CLO16 |
| Paper Structure I | 1 | CLO16 |
| Paper Structure II | 1 | CLO12 |
| Structure of Figures | 1 | CLO12 |
| Structure of Tables | 1 | CLO12 -CLO16 |
| Abbreviations, Formatting | 1 | CLO16 |
| How to write References | 1 | CLO12 -CLO16 |
| Resume writing | 1 | CLO12 -CLO16 |

| | | | |
|---|---|---|---|
| 13 | Presentation Skills I | 1 | CLO12 -CLO16 |
| 14 | Presentation Skills II | 1 | CLO12 -CLO16 |

## 10. Matrix of Program LOs with Course LOs

| Program LOs | | Course LOs | |
|---|---|---|---|
| PLO5 | Practice research techniques and methods of investigation as an inherent part of learning. | CLO12 | Practice research techniques and methods of investigation as an inherent part of learning |
| PLO8 | Communicate effectively verbally and in writing by Selecting the most appropriate form in which to present information | CLO16 | Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools. |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Associate Prof. Yasmin Talaat Ismail** | |
| **Head of Department** | **Assoc Prof. Dr. Reham Othman** | |
| **Date of Approval** | **17-9-2024** | |

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس

**Course Specification**

**Course Code: Are 1204 Course Title: Environmental Design & Control**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering | | | |
| **Department offering the program** | Architecture Engineering | | | |
| **Department offering the course** | Architecture Engineering | | | |
| **Course Code** | ARE 1204 | | | |
| **Year/level** | first year /Second Level | | | |
| **Specialization** | Major | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 1 | 2 | 0 | 3 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Provide the students with the capacity to prepare flexible and ecologically responsible designs by understanding modern structural and technological designs (AM5.1) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO9 | Utilize contemporary technologies, codes of practice and standards. |
| CLO10 | Utilize the quality guidelines, health and safety requirements, and environmental issues. |
| CLO26 | Prepare environmentally responsible designs to preserve and rehabilitate the environment |

## 4. Course Contents

| Topics | Week |
|---|---|
| Introduction to Bio climatic architecture | 1 |
| classification of climatic zones | 2 |
| human thermal comfort | 3 |
| Environmental factors effecting architecture design: Sun : | 4 |
| Solar path, Sun Angles, Solar Azimuth | 5 |
| Environmental factors effecting architecture design: Sun : | 6 |
| Environmental factors effecting architecture design: wind | 7 |

| | |
|---|---|
| Environmental factors effecting architecture design: humidity | 8 |
| Environmental Challenges & Sustainable Solutions | 10 |
| Fundamental science and engineering principles of various green technologies employed for water, waste and energy sectors | 11 |
| Best practices in buildings regarding environmental design | 12 |
| Energy and Environmental Design rating systems LEED ,BAREAM | 13 |
| Energy and Environmental Design rating systems : ,WELL & GREEN STAR Green Pyramid, QSAS, PRS & ARZ | 14 |
| Energy and Environmental Design rating systems : QSAS, PRS & ARZ | 15 |

## 5. Teaching and Learning methods

| Course learning Outcomes (LOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research | Projects | Presentation | Site Visits | Discussion | Brain storm | E-Learning | Self-learning | Modeling and simulation |
| CLO9 | √ | | - | √ | - | | - | √ | √ | √ | √ | |
| CLO10 | √ | | - | | - | √ | - | | √ | | | |
| CLO26 | √ | √ | - | √ | - | √ | - | | | | | |

## 6. Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | LOs |
|---|---|---|
| 1 | Mid Term Exam | CLO9-CLO10-CLO26 |
| 2 | Researches | CLO9-CLO10 |
| 3 | Presentations | CLO26 |
| 4 | Written Exam | CLO9-CLO10-CLO26 |

### 6.2 Assessment Schedule

| Assessment Method | Weeks |
|---|---|
| Mid Term Exam | 9 |
| Researches | 8,14 |
| Presentations | 15 |
| Written Exam | 16 |

### 6.3 Weighting of Assessments

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| **Teacher Opinion** | Mid Term Exam | 50 | 50 | 20 | 20 |

| | | | | | |
|---|---|---|---|---|---|
| | Researches | | | 20 | 20 |
| | Presentations | | | 10 | 10 |
| **Final Exam** | Written exam | 50 | 50 | 50 | 50 |
| **Total** | | 100 | 100 | 100 | 100 |

## 7. List of References

[1] Tracy B., Vicky L. (2016). Design for Sustainability: A Practical Approach, Taylor & Francis Press, ISBN: 0-080-43004

[2] Catalina S., John L. (2017). Smart Energy Control Systems for Sustainable Buildings Guide to Green Building Rating Systems , Springer International Publishing

[3] Blokdyk G. (2021). Control Environment A Complete Guide. 5STARCooks ,1st edition, ISBN-10 : 0655948600

## 8. Facilities required for teaching and learning

| |
|---|
| Lecture hall |
| White board |
| Data show |

## 9.Matrix of Course Content with Course LO's

| Topics | Aim | LO's |
|---|---|---|
| Introduction to Bio climatic architecture | 1 | CLO9-CLO10-CLO26 |
| classification of climatic zones | 1 | CLO10-CLO26 |
| human thermal comfort | 1 | CLO9-CLO10 |
| Environmental factors effecting architecture design | 1 | CLO9-CLO10-CLO26 |
| Solar path, Sun Angles, Solar Azimuth | 1 | CLO9-CLO10-CLO26 |
| Environmental factors effecting architecture design: Sun : | 1 | CLO9-CLO10-CLO26 |
| Environmental factors effecting architecture design: wind | 1 | CLO9-CLO10-CLO26 |
| Environmental factors effecting architecture design: humidity | 1 | CLO9-CLO10-CLO26 |
| Environmental Challenges & Sustainable Solutions | 1 | CLO10-CLO26 |
| Fundamental science and engineering principles of various green technologies employed for water, waste and energy sectors | 1 | CLO9-CLO10-CLO26 |
| Best practices in buildings regarding environmental design | 1 | CLO9-CLO10 |

| | | |
|---|---|---|
| Energy and Environmental Design rating systems LEED, BAREAM | 1 | CLO9-CLO10-CLO26 |
| Energy and Environmental Design rating systems: WELL & GREEN STAR Green Pyramid, QSAS, PRS & ARZ | 1 | CLO9-CLO10-CLO26 |

## 9. Matrix of Program LOs with Course LOs

| Program LOs | | Course LOs | |
|---|---|---|---|
| PLO4 | Utilize contemporary technologies, and environmental issues | CLO9 | Utilize contemporary technologies, codes of practice and standards. |
| | | CLO10 | Utilize the quality guidelines, health and safety requirements, and environmental issues. |
| PLO13 | Preparing environmentally responsible designs to preserve and rehabilitate the environment through an understanding of the environmental design | CLO26 | Prepare environmentally responsible designs to preserve and rehabilitate the environment |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Dr. Yasmin Talaat Ismail** | |
| **Head of Department** | **Assoc Prof. Dr. Reham Othman** | |
| **Date of Approval** | **710/2024** | |

# Course Specification

**Course Code: ARE 1203** **Course Title: History of Architecture 1**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering | | | |
| **Department offering the program** | Architecture Engineering | | | |
| **Department offering the course** | Architecture Engineering | | | |
| **Course Code** | ARE 1203 | | | |
| **Year/level** | first year / Second Level | | | |
| **Specialization** | **Major** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 4 | - | - | 4 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Provide the students with modern academic and technical skills, cultural knowledge of history, fine arts, and local and international heritage (AM3.1) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO21 | Create architectural, urban and planning designs that meet aesthetic and technical requirements |
| CLO22 | use Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences |

## 4. Course Contents

| Topics | Week |
|---|---|
| Introduction to the history of architecture through the ages | 1 |
| Architectural thought and design philosophy throughout the ages | 2 |
| Identity of different peoples + handing over models of pre-civilization buildings | 3 |
| Research and discussion about ancient civilizations | 4 |
| Ancient Civilizations and its architectural thoughts | 5 |

| | |
|---|---|
| The ancient Egyptian civilization and the factors affecting it | 6 |
| Ancient Egyptian Civilization (Funeral Buildings) | 7 |
| Research for ancient Egyptian Civilization and its buildings | 8 |
| Ancient Egyptian Civilization principles | 10 |
| Ancient Egyptian Civilization (Religious Buildings) | 11 |
| Classical Civilizations (Greek - Roman) and its thoughts | 12 |
| Architecture in the era of the dawn of Christianity its architecture thoughts | 13 |
| Research and discussion about Byzantine | 14 |
| Byzantine architecture and its architecture thoughts | 15 |

## 5. Teaching and Learning methods

| Course learning Outcomes (LOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brain storm | E-Learning | Self-learning | Modeling and Simulation |
| CLO21 | √ | √ | - | √ | - | √ | - | √ | √ | √ | - | - |
| CLO22 | √ | √ | - | √ | - | √ | - | √ | √ | - | √ | - |

## 6. Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | Los |
|---|---|---|
| 1 | Written exam | CLO21-CLO22 |
| 2 | Discussions | CLO21-CLO22 |
| 3 | Mid Term Exam | CLO21-CLO22 |
| 4 | Class works | CLO21-CLO22 |
| 5 | Projects | - |
| 6 | Researches | CLO21-CLO22 |
| 7 | Reports | - |
| 8 | Presentations | CLO21-CLO22 |
| 9 | Quiz | - |
| 10 | Skiz | - |

### 6.2 Assessment Schedule

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Written exam | 16 |

| | | |
|---|---|---|
| 2 | Discussions | Weekly |
| 3 | Mid Term Exam | 9 |
| 4 | Class works | twice |
| 5 | Projects | - |
| 6 | Researches | 3Times |
| 7 | Reports | - |
| 8 | Presentations | 3Times |
| 9 | Quiz | - |
| 10 | Skiz | - |

**6.3 Weighting of Assessments**

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| **Teacher Opinion** | Discussions | %50 | 50 | %5 | 5 |
| | Class works | | | %5 | 5 |
| | Researches | | | %10 | 10 |
| | Presentations | | | %10 | 10 |
| | Mid-term exam | | | %20 | 20 |
| **Final Exam** | Written exam | %50 | 50 | %50 | 50 |
| **Total** | | %100 | 100 | %100 | 100 |

## 7. List of References


- رنا اسماعيل اليسير,(2019),تاريخ العمارة بين القديم والحديث,دار اثراء للنشر والتوزيع, العدد الرابع ISBN 9957780128.
- قبيلة المالكى, (2016) تاريخ العمارة عبر العصور, دار المنهج للنشر والتوزيع,عمان,العدد السابع عشر.
- توفيق عبدالجواد,(2008), تاريخ العمارة والفنون فى العصور الاولى, متبة الانجلو المصرية.
- توفيق عبدالجواد, (1984), العمارة وحضارة مصر الفرعونية,مكتبةالانجلو المصرية.


## 8. Facilities required for teaching and learning

| |
|---|
| Lecture/Classroom |
| White board |
| Data show |

## 9. Matrix of Course Content with Course LO's

| Topics | Aim | LO's |
|---|---|---|
| Introduction to the history of architecture through the ages | 1 | CLO21-CLO22 |

| | | |
|---|---|---|
| Architectural thought and design philosophy throughout the ages | 1 | CLO21-CLO22 |
| Identity of different peoples + handing over models of pre-civilization buildings | 1 | CLO21-CLO22 |
| Research and discussion about ancient civilizations | 1 | CLO21-CLO22 |
| Ancient Civilizations and its architectural thoughts | 1 | CLO21 |
| The ancient Egyptian civilization and the factors affecting it | 1 | CLO21 |
| Ancient Egyptian Civilization (Funeral Buildings) | 1 | CLO21-CLO22 |
| research for ancient Egyptian Civilization and its buildings | 1 | CLO21-CLO22 |
| Ancient Egyptian Civilization principles | 1 | CLO21-CLO22 |
| Ancient Egyptian Civilization (Religious Buildings) | 1 | CLO21-CLO22 |
| Classical Civilizations (Greek - Roman) and its thoughts | 1 | CLO21-CLO22 |
| Architecture in the era of the dawn of Christianity its architecture thoughts | 1 | CLO22 |
| Research and discussion about Byzantine | 1 | CLO21-CLO22 |
| Byzantine architecture and its architecture thoughts | 1 | CLO21-CLO22 |

## 10. Matrix of Program LOs with Course Los

| Program LOs | | Course Los | |
|---|---|---|---|
| PLO11 | Create architectural, urban and planning designs that meet aesthetic and technical requirements using Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences. | CLO21 | Create architectural, urban and planning designs that meet aesthetic and technical requirements |
| | | CLO22 | use Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Dr. Hend Ali** | |
| **Head of Department** | **Assocc. Prof. Reham Othman** | |
| **Date of Approval** | **07/10/2024** | |

# Course Specification

**Course Code: ARE 1201** **Course Title: Building construction 2**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering | | | |
| **Department offering the program** | Architecture Engineering | | | |
| **Department offering the course** | Architecture Engineering | | | |
| **Course Code** | ARE 1201 | | | |
| **Year/level** | first year / Second Level | | | |
| **Specialization** | **Major** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 2 | 3 | - | 5 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Provide the students with the capacity to prepare flexible and ecologically responsible designs by understanding modern structural and technological designs (AM5.1) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO26 | Prepare environmentally responsible designs to preserve and rehabilitate the environment |
| CLO27 | choose the structural design, construction, technology used |

## 4. Course Contents

| Topics | Week |
|---|---|
| Introduction about stairs and its types | 1 |
| Illustrated stairs in Building and its structural systems | 2 |
| Illustrated how to draw plans of stairs in Building and its structural systems | 3 |
| Illustrated how to draw sectional of stairs in Building and its structural systems | 4 |
| Explain special modeling of stairs | 5 |
| Illustrated Damp proofing, Heat and sound insulation, | 6 |
| Illustrated how to draw Expansion and settlement joints | 7 |

| | |
|---|---|
| Illustrated Carpentry work in the building (doors-windows) details . | 8 |
| How to draw Carpentry work in the building (doors-windows) details . | 10 |
| Discussion about finishing details | 11 |
| Wooden floor details and construction | 12 |
| Illustrated architectural sanitary drawings | 13 |
| Illustrated principles of architectural drawings | 14 |
| follow up project presentation | 15 |

## 5. Teaching and Learning methods

| Course learning Outcomes (CLOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brain storm | E-Learning | Self-learning | Modeling and Simulation |
| CLO26 | √ | √ | - | √ | - | √ | - | √ | √ | - | √ | - |
| CLO27 | √ | √ | - | √ | - | - | - | - | √ | - | - | - |

## 6. Students' Assessment

| 6.1 Students' Assessment Method | |
|---|---|
| **Assessment Method** | **Los** |
| Written exam | CLO26 -CLO27 |
| Discussions | CLO26-CLO27 |
| Mid Term Exam | CLO26 |
| Class works | CLO26 -CLO27 |
| Projects | - |
| Researches | CLO26 -CLO27 |
| Reports | - |
| Presentations | CLO26 -CLO27 |
| Laboratory | - |
| Quiz/Skiz | - |

**6.2 Assessment Schedule**

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Written exam | 16 |
| 2 | Discussions | Weekly |
| 3 | Mid Term Exam | 9 |
| 4 | Class works | weekly |
| 5 | Projects | - |
| 6 | Researches | 6-12 |
| 7 | Reports | - |

| | | |
|---|---|---|
| 8 | Presentations | 6-12 |
| 9 | Quiz | - |
| 10 | Skiz | - |

**6.3 Weighting of Assessments**

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| **Teacher Opinion** | Discussions | %60 | 60 | %3 | 3 |
| | Class works | | | %12 | 12 |
| | Researches | | | %3 | 3 |
| | Presentations | | | %2 | 2 |
| | Mid-term exam | | | %20 | 20 |
| **Final Exam** | Written exam | %40 | 40 | %40 | 40 |
| **Total** | | %100 | 100 | %100 | 100 |

## 7. List of References


- DAVID CHAPELL & ANDREW WILLS,(2019)," The Architect in Practice "RIBA, New york, Wiley-Blackwell ,11TH Edition ISBN 13 978-1118907733
- Guedi Capeluto, Carlos Ernesto Ochoa,(2017), Intelligent Envelopes for High-Performance Buildings, Design and Strategy ,Springer Cham,1st Edition, ISBN13 978-3319392547.
- Wilhelm, N.E. (2014). Building Construction. In: Selin, H. (eds) Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures. Springer,6TH ed, Jones & Bartlett Learning,ISBN13 978-1284177312.
- Edward Allen , Joseph Iano(2019); Fundamentals of Building Construction: Materials and Methods, Wiley, 7th Ed, ISBN13978-1119446194.
- Dennis J. Hall, Nina M. Giglio;(2016), Architectural Graphic Standards, Mitchell, American Institute of ArchitectS, McGraw Hill ,12th Ed, ISBN13 978-0071772938.
- محمود احمد على,(2021) , سلسلة دليلك فى عالم التنفيذ الجزء الاول والثانىو دار الكتب العلمية للنشر والتوزيع, القاهرة.


## 8. Facilities required for teaching and learning

| |
|---|
| Lecture/Classroom |
| White board |
| Data show |

## 9. Matrix of Course Content with Course LO's

| Topics | Aim | LO's |
|---|---|---|
| Introduction about stairs and its types | 1 | CLO26 |
| Illustrated stairs in Building and its structural systems | 1 | CLO26 |
| Illustrated how to draw plans of stairs in Building and its structural systems | 1 | CLO26-CLO27 |
| Illustrated how to draw sectional of stairs in Building and its structural systems | 1 | CLO26-CLO27 |
| Explain special modeling of stairs | 1 | CLO27 |
| Illustrated Damp proofing, Heat and sound insulation, | 1 | CLO26-CLO27 |
| Illustrated how to draw Expansion and settlement joints | 1 | CLO26-CLO27 |
| Illustrated Carpentry work in the building (doors-windows) details . | 1 | CLO26 |
| How to draw Carpentry work in the building (doors-windows) details. | 1 | CLO26-CLO27 |
| Discussion about finishing details | 1 | CLO26-CLO27 |
| Wooden floor details and construction | 1 | CLO26-CLO27 |
| Illustrated architectural sanitary drawings | 1 | CLO26-CLO27 |
| Illustrated principles of architectural drawings | 1 | CLO26-CLO27 |
| follow up project presentation | | CLO26-CLO27 |

## 10. Matrix of Program PLOs with Course CLos

| Program PLOs | | Course LOs | |
|---|---|---|---|
| PLO13 | Preparing environmentally responsible designs to preserve and rehabilitate the environment through an understanding of the structural design, construction, technology used and associated engineering problems Building designs. | CLO26 | Prepare environmentally responsible designs to preserve and rehabilitate the environment |
| | | CLO27 | choose the structural design, construction, technology used |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Dr. Hend Ali** | |
| **Head of Department** | **Assocc. Prof. Reham Othman** | |

| | | |
|---|---|---|
| **Date of Approval** | **07/10/2024** | |

# Course Specification

**Course Code: ARE 1202** **Course Title: Architectural Design (1)**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering | | | |
| **Department offering the program** | Architecture Engineering | | | |
| **Department offering the course** | Architecture Engineering | | | |
| **Course Code** | ARE 1202 | | | |
| **Year/level** | First year /Second level | | | |
| **Specialization** | **Major** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | - | 7 | - | 7 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Produce innovative design engineering solutions in many practices field of design and executive architecture engineering and urban planning at the local, regional, and international levels (AM1.2) |
| 2 | Train the students for innovative and creative thinking, describing and solving design problems and requirements (AM2.1) |
| 3 | Use principles that ensure meeting the needs of present and future generations in terms of social, cultural and environmental aspects (AM2.2) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO23 | Produce designs that meet the requirements of building users |
| CLO24 | Deal with the relation between people, buildings, and their surrounding environment |
| CLO25 | Produce designs with the scale of humanity and its needs |

## 4. Course Contents

| Topics | Week |
|---|---|
| Introduction of the project | 1 |
| Research (Analysis of Similar projects) + Skiz for zoning | 2 |
| Layout of the project to show circulation and main elements. | 3 |

| | |
|---|---|
| How to deal with simple projects which has simple constrains (layout and pre- plan) | 4-5 |
| Emphasize design integrations with surrounding environment. (layout and pre- plan) | 6 |
| Relations between spaces in building (plans) | 7 |
| Sections and heights of building (huminites scale) | 8 |
| Skiz (Layout + Ground and first floor plan) | 9 |
| Matching of plans – form -sections | 10 |
| Elevations and respect the location style | 11 |
| Presentation principles for the project | 12 |
| Match the whole project | 13 |
| Semifinal project | 14 |
| Final project | 15 |

## 5. Teaching and Learning methods

| Course learning Outcomes (LOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brain storm | E-Learning | Self-learning | Modeling and Simulation |
| CLO23 | √ | - | - | - | √ | - | - | √ | - | - | √ | - |
| CLO24 | √ | - | - | √ | √ | √ | - | √ | - | √ | - | - |
| CLO25 | √ | - | - | - | √ | - | - | √ | - | - | √ | - |

## 6. Students' Assessment

### 6.1 Students' Assessment Method

| Assessment Method | LOs |
|---|---|
| written exam | CLO23-CLO24-CLO25 |
| Discussions | CLO23-CLO24-CLO25 |
| Mid Term Exam | CLO23-CLO24-CLO25 |
| Class works | - |
| Projects | CLO23-CLO24-CLO25 |
| Researches | CLO24 |
| Reports | - |
| Presentations | CLO24 |
| Quiz | - |
| Skiz | CLO23-CLO24-CLO25 |

### 6.2 Assessment Schedule

| No. | Assessment Method | Weeks |
|---|---|---|

| | | |
|---|---|---|
| 1 | Written exam | 16 |
| 2 | Discussions | Weekly |
| 3 | Mid Term Exam | 9 |
| 4 | Class works | - |
| 5 | Projects | Weekly |
| 6 | Researches | 2 |
| 7 | Reports | - |
| 8 | Presentations | 2-14-15 |
| 9 | Quiz | - |
| 10 | Skiz | 6-11 |

**6.3 Weighting of Assessments**

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| **Teacher Opinion** | Discussions | %60 | 60 | %10 | 10 |
| | Researches | | | %5 | 5 |
| | Presentation | | | %5 | 5 |
| | Project | | | %15 | 15 |
| | Skiz | | | %5 | 5 |
| | Mid-term exam | | | %20 | 20 |
| **Final Exam** | Written exam | %40 | 40 | %40 | 40 |
| **Total** | | %100 | 100 | %100 | 100 |

## 7. List of References


- Joseph De Chiara (Author, Editor), Michael J. Crosbie (Author, Editor),Time-Saver Standards for Building Types 4th Edition , ISBN: 0070163871
- Ernst Neufert (Author), Peter Neufert (Author) ,Bousmaha Baiche (Editor), Nicholas Walliman(Editor), “Neufert s Architects Data 4th Edition”, published by Wiley–Blackwell, 2012, ISBN: 9781405192538
- FRANCIS D. K. CHING, “FORM, SPACE, AND ORDER”, Fourth Edition, 2020.
- STEVEN P. JUROSZEK, “Design Drawing”, Third Edition, 2020, ISBN: 9780471752165.


## 8. Facilities required for teaching and learning

| |
|---|
| Lecture/Classroom |
| White board |
| Data show |

## 9. Matrix of Course Content with Course LO’s

| Topics | Aim | LO's |
|---|---|---|
| Introduction of the project | 2 | CLO24 |
| Research (Analysis of Similar projects) + Skiz for zoning | 2 | CLO24 |
| Layout of the project to show circulation and main elements. | 1-2-3 | CLO24 |
| How to deal with simple projects which has simple constrains (layout and pre- plan) | 1-2-3 | CLO23- CLO25 |
| Emphasize design integrations with surrounding environment. (layout and pre-plan) | 1-2-3 | CLO22 |
| Relations between spaces in building (plans) | 1-2-3 | CLO23-CLO24-CLO25 |
| Skiz (Layout + Ground and first floor plan) | 1-2-3 | CLO23-CLO24-CLO25 |
| Sections and heights of building (huminites scale) | 1-2-3 | CLO23-CLO24-CLO25 |
| Matching of plans – form -sections | 1-2-3 | CLO23-CLO24-CLO25 |
| Elevations and respect the location style | 1-2-3 | CLO23-CLO24-CLO25 |
| Presentation principles for the project | 1-2-3 | CLO23-CLO24-CLO25 |
| Match the whole project | 1-2-3 | CLO23-CLO24-CLO25 |
| Semifinal project | 1-2-3 | CLO23-CLO24-CLO25 |
| Final project | 1-2-3 | CLO23-CLO24-CLO25 |

## 10. Matrix of Program LOs with Course LOs

| Program LOs | | Course LOs | |
|---|---|---|---|
| PLO12 | Produce designs that meet the requirements of building users by understanding the relationship between people and buildings, and between the buildings and their surrounding environment, with the necessity of linking the buildings and the spaces between them to the scale of humanity and its needs. | CLO23 | Produce designs that meet the requirements of building users |
| | | CLO24 | Deal with the relation between people, buildings, and their surrounding environment |
| | | CLO25 | Produce designs with the scale of humanity and its needs |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Assocc. Prof. Mohammed Mustafa** |  |

| | | |
|---|---|---|
| **Head of Department** | **Assocc. Prof. Reham Othman** |  |
| **Date of Approval** | **1/10/2024** | |

# Course Specification

**Course Code: CVE 1231** **Course Title: Theory of structure**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering Program | | | |
| **Department offering the program** | Architecture Engineering Program | | | |
| **Department offering the course** | Civil Engineering Department | | | |
| **Course Code** | CVE 1231 | | | |
| **Year/level** | First year / Second level (1st Semester) | | | |
| **Specialization** | **Minor** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 4 | 2 | | 6 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 1 | Teach the students how to analyze structure (AM2). |
| 2 | Give the students the knowledge and expertise to analysis of structure using several techniques (AM3). |
| 3 | Make it possible for graduates to pursue continuing education and self-learning, and to qualify for advanced scientific degrees in structural analysis (AM5). |

## 3. Learning Outcomes (LOs)

| | |
|---|---|
| **Clo1** | Formulate complex engineering problems by applying engineering fundamentals, basic science, and mathematics. |
| Clo2 | Solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.by applying engineering fundamentals, basic science, and mathematics. |

## 4. Course Contents

| No. | Topics | Week |
|---|---|---|
| 1 | Introduction theory of structure, and stability equations | 1 |
| 2 | Determination of reactions for beams without intermediate hinges. | 2 |
| 3 | Determination of reactions for beams with intermediate hinges | 3 |
| 4 | Determination of internal forces for beams without intermediate hinges. | 4 |
| 5 | Determination of internal forces for beams with intermediate hinges. | 5 |
| 6 | Determination of reactions for Frames without inclined members. | 6 |
| 7 | Determination of reactions for Frames with inclined members. | 7 |
| 8 | Determination of internal forces for Frames without inclined members. | 8 |
| 9 | Determination of internal forces for Frames with inclined members. | 10 |
| 10 | Determination of reactions for trusses | 11 |
| 11 | Define the force for all the truss members by goint method | 12 |
| 12 | Define the force for all the truss members by section method | 13 |
| 13 | Revision | 14 |

## 5. 6. Teaching and Learning methods

| Course learning Outcomes (LOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures (face to face / online) | Presentation / Movies | Discussions | Tutorials | Practical and lab. Experiments | Problem Solving | Brain Storming | Projects and Team Working | Site Visits | E-Learning | Research / Reports | Self-learning | Modeling and Simulation |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLO1 | √ | √ | | √ | | | | | | √ | | | |
| CLO2 | √ | √ | | √ | | | | | | | | | |

## 7. Teaching and Learning methods of Disabled Students

| No. | Teaching Method | Reason |
|---|---|---|
| 1 | Additional Tutorials | |
| 2 | Online lectures and assignments | |

## 8. Students' Assessment

### 7.1 Students' Assessment Method

| No. | Assessment Method | Los |
|---|---|---|
| 1 | Reports / Sheets | Clo1, clo2 |
| 2 | Quiz 1 / Quiz 2 | Clo1, clo2 |
| 3 | Mid-term Exam | Clo1, clo2 |
| 4 | Oral/ Practical Exam | ------- |
| 5 | Final Exam | Clo1, clo2 |

### 7.2 Assessment Schedule

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Reports / Sheets | Bi-weekly |
| 2 | Quiz 1 / Quiz 2 | 4 & 10 |
| 3 | Mid-term Exam | 9 |
| 4 | Oral/ Practical Exam | 15 |
| 5 | Final Exam | 16 |

**7.3 Weighting of Assessments**

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| **Teacher Opinion** | Reports / sheets / Activities | 40% | 40 | 10% | 10 |
| | Quiz 1 / Quiz 2 | | | 10% | 10 |
| | Mid-term exam | | | 20% | 20 |
| **Practical / Oral** | Practical Attendance | | | | |
| | Lab. Reports | | | | |
| | Lab. Activities / Projects | | | | |
| | Final oral / practical exam | | | | |
| **Final Exam** | | 60% | 60 | | |
| **Total** | | 100% | 100 | | |

## 9. List of References

[1] Farkas, József, and Károly Jármai. Analysis and optimum design of metal structures. CRC Press, 2020.

[2] Megson, Thomas Henry Gordon. Structural and stress analysis. Butterworth-Heinemann, 2019.

[3] Kassimali, Aslam. Structural analysis. Cengage Learning, 2018.

[4] El Dakhekhni, Theory of Structures.

[5] Ramamrutham, Hand Book Of Civil Engineering.

[6] West, Fundamentals Of Structural Analsis.

## 10. Facilities required for teaching and learning

| |
|---|
| Lecture/Classroom |
| White board |
| Lecture room equipped with e-learning tools (computer, internet, mike, headphones, etc.) |
| Moodle and Microsoft teams |
| Data show |
| Laboratory Usage |

## 11. Matrix of Course Content with Course LO's

| No. | Topics | Aim | Los |
|---|---|---|---|
| 1 | Introduction theory of structure, and stability equations | 2 | Clo1, clo2 |
| 2 | Determination of reactions for beams without intermediate hinges. | 2,3 | Clo1, clo2 |
| 3 | Determination of reactions for beams with intermediate hinges | 2,3 | Clo1, clo2 |
| 4 | Determination of internal forces for beams without intermediate hinges. | 2,3 | Clo1, clo2 |
| 5 | Determination of internal forces for beams with intermediate hinges. | 2 | Clo1, clo2 |
| 6 | Determination of reactions for Frames without inclined members. | 2 | Clo1, clo2 |
| 8 | Determination of reactions for Frames with inclined members. | 5 | Clo1, clo2 |
| 9 | Determination of internal forces for Frames without inclined members. | 5 | Clo1, clo2 |
| 10 | Determination of internal forces for Frames with inclined members. | 5 | Clo1, clo2 |
| 11 | Determination of reactions for trusses | 5 | Clo1, clo2 |
| 12 | Define the force for all the truss members by goint method | 5 | Clo1, clo2 |
| 13 | Define the force for all the truss members by section method | 5 | Clo1, clo2 |
| 14 | Revision | 2,3,5 | Clo1, clo2 |

## 12. Matrix of Program LOs with Course Los

| Program Los | | Course Los | |
|---|---|---|---|
| Plo1 | Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics. | Clo1 | Formulate complex engineering problems by applying engineering fundamentals, basic science, and mathematics. |
| | | Clo2 | Solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.by applying engineering fundamentals, basic science, and mathematics. |

| Title | Name | Signature |
|---|---|---|
| **Course Coordinator** | **Dr. Medhat Momtaz** |  |
| **Program Coordinator:** | **Prof. Dr. Reham Othman.** |  |
| **Head of Department** | **Prof. Dr. Reham Othman.** |  |
| **Date of Approval** | **9/2024** | |

# Course Specification

**Course Code: CVE 1232** **Course Title: Foundations & Testing of Materials**

## 1. Basic information

| | | | | |
|---|---|---|---|---|
| **Program Title** | Architecture Engineering | | | |
| **Department offering the program** | Architecture Engineering | | | |
| **Department offering the course** | Civil Engineering | | | |
| **Course Code** | CVE 1232 | | | |
| **Year/level** | First year / Second Level | | | |
| **Specialization** | **Minor** | | | |
| **Teaching Hours** | Lectures | Tutorial | Practical | Total |
| | 4 | 2 | 0 | 6 |

## 2. Course Aims

| No. | Aim |
|---|---|
| 2 | Able to plan supervise and follow up the implementation of engineering projects(AM1.3) |
| 1 | Train the students for innovative and creative thinking, describing and solving design problems and requirements (AM2.1) |

## 3. Course Learning Outcomes (CLOs)

| | |
|---|---|
| CLO 3 | Conduct appropriate experimentation and/or simulation to draw conclusions. |
| CLO 4 | Analyze the data by using statistical analyses to draw conclusions. |
| CLO5 | Evaluate findings, statistical analyses and engineering judgment. |
| CLO12 | Practice research techniques and methods of investigation as an inherent part of learning. |

## 4. Course Contents

| Topics | Week |
|---|---|
| Soil formation: soil origin and formation, basic definitions. | 1 |
| Physical properties of soil: definitions, basic relationships, laboratory tests, water content, specific gravity, unit weight, relative density. | 2 |
| Physical properties of soil: sieves and hydrometer analysis, Atterberg limits, Soil classification. | 3 |
| Physical properties of soil: Relative density, measure density in field. | 4 |

| | |
|---|---|
| Foundation: Types of foundation, Design criteria, Suitability of foundation type to soil and loads. | 5 |
| Foundation: Design of shallow and deep foundation | 6 |
| Properties and testing of stone, specific gravity, unit weight, natural and total absorption, permeability, soundness, crushing, compressive strength. | 8 |
| Properties and testing of bricks, Types of bricks, dimensions of bricks, specific gravity, unit weight, absorption, compressive strength. | 9 |
| Properties and testing of Timber**,** using of timber in architecture purposes**.** | 10 |
| Properties and testing of cement, Types of cement, specific gravity, volumetric weight, fineness, setting time, soundness, compression, absorption, compressive strength. | 11 |
| Properties and testing of aggregates (sand, gravel), specific gravity, unit weight, grain size distribution**,** content of fine particles. | 12 |
| Concrete: Types of Concrete, components of concrete. Tests on fresh concrete and hardened concrete. | 13 |
| Concrete manufacturing: storage, mixing, transportation, pouring, compacting, curing. | 14 |
| Revision | 15 |

## 5. Teaching and Learning methods

| Course learning Outcomes (LOs) | Teaching and Learning Methods | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Assignment | Labs | Research and Reports | Projects | Presentation | Site Visits | Discussion and Dialogue | Brain storm | E-Learning | Self-learning | Modeling and Simulation |
| CLO 3 | √ | | - | | | | - | | - | - | | |
| CLO 4 | √ | √ | - | √ | √ | | - | √ | - | - | | |
| CLO5 | √ | √ | - | √ | √ | | - | √ | - | √ | | |
| CLO12 | √ | | - | √ | | | - | √ | - | - | | |

## 6. Students' Assessment

### 6.1 Students' Assessment Method

| No. | Assessment Method | LOs |
|---|---|---|
| 1 | Written exam | CLO3,CLO4, CLO5 |
| 2 | Discussions | CLO4, CLO5,CLO12 |
| 3 | Mid Term Exam | CLO3,CLO4, CLO5 |
| 4 | classwork | CLO3,CLO4, CLO5 |
| 5 | Projects | CLO4, CLO5 |
| 6 | Researches | CLO4, CLO5,CLO12 |
| 7 | Reports | - |
| 8 | Presentations | - |

| | | |
|---|---|---|
| 9 | Quiz | CLO3,CLO4, CLO5 |
| 10 | Skiz | - |

**6.2 Assessment Schedule**

| No. | Assessment Method | Weeks |
|---|---|---|
| 1 | Written exam | 14 |
| 2 | Discussions | - |
| 3 | Mid Term Exam | 7 |
| 4 | classwork | weekly |
| 5 | Projects | 10 & 11 |
| 6 | Researches | 1 |
| 7 | Reports | - |
| 8 | Presentations | - |
| 9 | Quiz | 9 |
| 10 | Skiz | - |

**6.3 Weighting of Assessments**

| | Assessment Method | Weights% | Weights | Weights% | Weights |
|---|---|---|---|---|---|
| **Teacher Opinion** | classwork | 40% | 40 | 10% | 10 |
| | Researches | | | 5% | 5 |
| | Quiz | | | 5% | 5 |
| | Mid-term exam | | | 20% | 20 |
| **Final Exam** | Written exam | 60% | 60 | 60% | 60 |
| **Total** | | 100 | 100 | 100 | 100 |

## 7. List of References

[1] Das B.M, "Advanced Soil Mechanics", Fifth Edition, ISBN: 0367730103, (2020).
[2] Egyptian Code of Practice for Soil Mechanics and Design and Construction of foundations, parts 5,10, Housing and Building Research Center, Cairo,2020.
[3] Liu C and Evett J.B, "Soils and Foundations" 7th Edition, Prentice Hall, ISBN: 0132221381 (2007).
[4] Barry, "Statics & Strength of Materials for Architecture & Building Construction" 4th Edition, Pearson, ISBN: 978-0135079256, (2011).

## 8. Facilities required for teaching and learning

| |
|---|
| Lecture/Classroom |
| White board |
| Data show |
| Laboratory Usage |

## 9. Matrix of Course Content with Course LO's

| Topics | Aim | LO's |
|---|---|---|
| Soil formation: soil origin and formation, basic definitions. | 1 | CLO4, CLO5 |
| Physical properties of soil: definitions, basic relationships, laboratory tests, water content, specific gravity, unit weight, relative density. | 1 | CLO3,CLO4, CLO5 |
| Physical properties of soil: sieves and hydrometer analysis, Atterberg limits, Soil classification | 1 | CLO3,CLO4, CLO5,CLO12 |
| Physical properties of soil: Relative density, measure density in field. | 1 | CLO3,CLO4, CLO5,CLO12 |
| Foundation: Types of foundation, Design criteria, Suitability of foundation type to soil and loads. | 1 | CLO5,CLO12 |
| Foundation: Design of shallow and deep foundation | 1 | CLO5,CLO12 |
| Properties and testing of stone, specific gravity, unit weight, natural and total absorption, permeability, soundness, crushing, compressive strength. | 1 | CLO3,CLO4, CLO5,CLO12 |
| Properties and testing of bricks, Types of bricks, dimensions of bricks, specific gravity, unit weight, absorption, compressive strength. | 1 | CLO3,CLO4, CLO5 |
| Properties and testing of Timber**,** using of timber in architecture purposes**.** | 1 | CLO3,CLO4, CLO5 |
| Properties and testing of cement, Types of cement, specific gravity, volumetric weight, fineness, setting time, soundness, compression, absorption, compressive strength. | 1 | CLO3,CLO4, CLO5 |
| Properties and testing of aggregates (sand, gravel), specific gravity, unit weight, grain size distribution**,** content of fine particles. | 1 | CLO3,CLO4, CLO5 |
| Concrete: Types of Concrete, components of concrete. Tests on fresh concrete and hardened concrete. | 1 | CLO3,CLO4, CLO, CLO12 |
| Concrete manufacturing: storage, mixing, transportation, pouring, compacting, curing. | 1 | CLO5 |
| Revision | 1 | CLO3,CLO4, CLO5, CLO12 |

## 10. Matrix of Program LOs with Course LOs

| Program LOs | | Course LOs | |
|---|---|---|---|
| PLO2 | Develop and conduct appropriate experimentation and/or simulation, analyses and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions. | CLO 3 | Conduct appropriate experimentation and/or simulation to draw conclusions. |
| | | CLO 4 | Analyze the data by using statistical analyses to draw conclusions. |
| | | CLO5 | Evaluate findings, statistical analyses and engineering judgment. |
| PLO5 | Practice research techniques and methods of investigation as an inherent part of learning. | CLO12 | Practice research techniques and methods of investigation as an inherent part of learning. |

| Title | Name | Signature |
|---|---|---|
| **Course coordinator** | **Dr. Mounir Kamel** |  |
| **Head of Department** | **Assocc. Prof. Reham Othman** |  |
| **Date of Approval** | **1/10/2024** | |