



University/Academy: Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute: College of Engineering & Technology
Program: B.Sc. Architectural Engineering and Environmental Design

Form no. (12): Course Specification

1- Course Data

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| Course Code: AR 334 | Course Title: History & Theory of Architecture 4 | Academic Year/Level: 3rd year / 5th semester |
| Specialization: Architecture | No. of Instructional Units Credit 3 Lecture 2 Tutorial 2 | Prerequisite AR131 |

2- Course Aim

(a) History:

This course covers the Early **Renaissance**, the High and Late Renaissance, as well as the Baroque and Rococo eras. It also covers the developments of the nineteenth century which led to key architectural movements. Innovation in materials (iron and glass) is carefully traced through eclecticism and classical revival.

The course aims to:

- Develop an understanding of the ways of looking at historical buildings and settlements in terms of social, structural, technological, geographical, etc. factors which influenced their design and planning.

(b) Theory:

This course focuses on architectural design and structure systems. Stability of buildings is focused on, including bearing systems, construction systems and structure systems. A study of form-active systems, vector – active systems, bulk-active systems, surface-active systems and vertical-structure systems is conducted. In addition to the design criteria of educational buildings (types, location and design principles). Also the design criteria of hotels are studied, including types, location and design principles.

The course aims to:

- Teach students to analyze buildings in terms of structural systems and architectural conception, as well as adopt appropriate structural systems to design buildings of various forms.

3- Intended Learning Outcomes

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| a- Knowledge and Understanding | Through knowledge and understanding, students will be able to: <ul style="list-style-type: none"> • Define different architectural theories, schools, technologies and structures that evolved throughout history starting from the Renaissance Period. • Distinguish and describe different structural systems and their architectural applications |
| b- Intellectual Skills | Through intellectual skills, students will be able to: <ul style="list-style-type: none"> • Differentiate between various architectural schools, philosophies, directions and theories comparatively. • Analyze the society, its needs, its civilization, technological development and their reflection on the architectural design structural components and formation. • Analyze architectural influencing factors and the surrounding environment and take them into consideration. • Compare between adaptive materials and techniques that respond to the local contexts and derive lessons for sustainable practices. • Analyze the role and relevance of structural systems in creating an intuitive design. |

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| c- Professional Skills | Through professional and practical skills, students will be able to: <ul style="list-style-type: none"> • Prepare reports integrating social, economical, structural, constructional and environmental dimensions. • Collect information from different resources to support scientific thinking and opinions in architectural discussion. |
| d- General Skills | Through general and transferable skills, students will be able to: <ul style="list-style-type: none"> • Write reports or essays in accordance with the standard scientific guidelines. • Present reports in seminars or group meetings, discuss findings, defend his/her ideas, and communicate effectively in writing, verbally and through drawings and models. • Independently seek new knowledge and conduct research using various resources. • Independently seek knowledge, set aims, targets, objectives and plan to meet them with a deadline (time management). |

4- Course Content

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| (a) History: | |
| Week No.1 | RENAISSANCE ARCHITECTURE IN EUROPE: Introduction: Early, High Renaissance. Mannerism, Baroque, Rococo, Neo. Classic. Italian Renaissance: Introduction, Florence, Rome, Venice. Early Renaissance: BRUNELLESCHI. Ex: Dome of Florence Cathedral, San Lorenzo, S.Spirito. The Pazzi Chapel. Florence. |
| Week No.2 | Italian Renaissance: ALBERTI Ex: S.Francesco, Rimini, S. Maria Novella, S.Andrea, Mantua, The Palazzo Pitti. Florence. MICHELOZZO di Bartolommeo Ex: The Medici Palace. |
| Week No.3 | Italian Renaissance: High Renaissance and Mannerism: BRAMANTE Ex: The Tempietto in S. Pietro in Montorio, S. Maria delle Grazie, Milan. PERUZZI: The Palazzo Pietro Massimi, Rome. SANGALLO: The Palazzo Farnese, Rome. SANSOVINO: The library of S. Mark's Venice. SANMICHELI, Palazzo Pompei. D. CURTONI. Gran Guardia: Verona. |
| Week No.4 | Italian Renaissance: PALLADIO The Basilica, Vicenza. The Rotonda. S.Giorgio Maggiore. The church of the Redentore. MICHELANGELO: The Capitol. S.Peter, Rome. |
| Week No.5 | Italian Renaissance: VIGNOLA Ex: The Villa Giulia. The Gesu church, Rome. S. Andrea, Via Flaminia. The Palazzo Farnese Caprarola. |
| Week No.6 | Italian Renaissance: Baroque & Rococo: Italy. BERNINI Ex. Pazzo of S. Peter, S. Andrea Quirinale, Rome. LONGHENA: S. Maria della Salute, Venice. BORROMINI: S. Carlo, S.Ivo. Rome. |
| Week No.7 | Continuation of the previous lecture and evaluation. |
| Week No.8 | French Renaissance: Introduction. Early Renaissance CORTONE: Château Chambord. Classic Renaissance LESCOT: Louvre. Paris. F.MANSART – Orleans Wing, château de Blois. De BROSSE. Palais du Luxembourg, Paris. F. MANSART: The Church of Val de Grace, Paris. The Château Maisons. |
| Week No.9 | French Renaissance: LE VAU: the Château Vaux – Le – Viconte. J.H. MANSART. Versailles. Dome des Invalides. J.A. GABRIEL: Place de la Concorde, Paris. Le Petit Trianon, Versailles. J.COURTONNE: Hôtel Mitignon, Paris. |
| Week No.10 | French Renaissance: The Neo – Classicism: SOFFLOT- Church of Sainte – Genevieve, Paris. LEDOUX. Royal tax – collecting stations. Royal Salt Works. BOULLEE. Cenotaph for Isaac Newton.P. VIGNON: Madeleine, Paris. ECCLECTICISM: DUQUESNEY – Gare de l'Est Paris. LABROUSTE Library of S. Geneviève, Paris. CONTAMIN – DUTERT: Galerie des Machines, Paris. G.EIFFEL: Eiffel Tower. GARNIER. The Opera House, Paris. |
| Week No.11 | English Renaissance: Introduction. Early Renaissance: SMYTHSON: Longleat House, Wollaton Hall. Late Renaissance: INIGO JONES: The Queen's House, Banqueting House. S. Paul's, Covent Garden. London. Sir. Ch. WREN: S. Paul's Cathedral, S. Stephen, S. James. S. Bride, S. Mary – le – Bow. London. |

Week No.12 Continuation of the previous lecture and evaluation.

Week No.13 English Renaissance: Introduction. *Early Renaissance:* SMYTHSON: Longleat House, Wollaton Hall. *Late Renaissance:* INIGO JONES: The Queen's House, Banqueting House. S. Paul's, Covent Garden. London. Sir. Ch. WREN: S. Paul's Cathedral, S. Stephen, S. James. S. Bride, S. Mary – le – Bow. London.

Week No.14 English Renaissance: Baroque: T.ARCHER S. Philip, Birmingham. N.HAWKSMOOR: Christ Church, Spitalfields, London. J.VANBRUGH: Castle Howard, Yorkshire. Blenheim Palace, Oxfordshire. *Neo-Classicism*, R.ADAM . Kedleston Hall, Derbyshire. *Ecclecticism*. H.L. ELMES:S.George's Hall , Liverpool.Ch. BARRY: The New Palace of Westminster. London . PAXTON . The Crystal Palace, London.

Week No.15 Renaissance Architecture in Europe : Baroque and Rococo: Austria and Germany: Von ERLACH, Karlskirche, Vienna. J.PRANDTAUER : Benedictine abbey at Melk. NEUMANN: Vierzehnheiligen, Germany. Neo-Classicism. LANGHAM : The Brandenburg Gate, Berlin. SCHINKEL: Altes Museum. Berlin.

(b) Theory:

Week No.1 Architectural and structural conception

Week No.2 Bearing systems, construction systems and structure system.

Week No.3 Structure systems (typology and materials).

Week No.4 Form-active structure systems, (cables systems, tent systems, pneumatic systems and architectural systems)

Week No.5 Vector-active structure systems (flat truss, curved truss and space truss systems).

Week No.6 Bulk-active structure systems (beams, frames and grid systems).

Week No.7 Continuation of the previous lecture and evaluation.

Week No.8 Surface active structure systems (prismatic, folded systems, pyramidal folded systems and curved shell systems).

Week No.9 Vertical structure systems (loads transmission and conception).

Week No.10 Design criteria of educational buildings (types, site and location, components, analysis and functional relations, design principles).

Week No.11 Design criteria of educational buildings (types, site and location, components, analysis and functional relations, design principles).

Week No.12 Continuation of the previous lecture and evaluation.

Week No.13 Design criteria of hotels (types, site and location, components, analysis and functional relations, design principles).

Week No.14 Design criteria of hotels (types, site and location, components, analysis and functional relations, design principles).

Week No.15 Revision.

5- Teaching and Learning Methods

The course comprises a combination of:

Lectures, and research assignments, discussion sessions, These are accompanied with field visits to the Museum of Modern Arts and some historical buildings related to the historical periods.

6-Teaching and Learning Methods for Students with Special Needs

- Consulting with lecturer during office hours.
- Consulting with teaching assistant during office hours.
- Private sessions for redelivering the lecture contents.
- For handicapped accessibility, please refer to program specification.

7- Student Assessment

Students must present one research for a given topic. The research is to be presented on a sheet of size A2 (59.5 x 42). The material discussed and presented is to be recorded and illustrated in a history notebook which forms the basis for assessment and serves as a future reference for the students. This is in addition to a three-hour exam.

History:

| Asses No. | Procedures used | | Start Week No. | Subm. Week No. | Weighting of Asses. |
|--------------|-----------------|------------------------------------|----------------|----------------|---------------------|
| | Type | To assess | | | |
| 1 | Notebook | Knowledge and practical skills. | 1 | 6 | 5% |
| 2 | Written exam. | Knowledge and understanding. | | 6 | 10% |
| 3 | Research | Practical and transferable skills. | 1 | 11 | 5% |
| 4 | Written exam. | Knowledge and understanding. | | 11 | 5% |
| 5 | Notebook | Knowledge and practical skills. | | 14 | 5% |
| 6 | Written exam. | Knowledge and intellectual skills. | | 14 | 20% |
| Total | | | | | 50% |

Theory:

| Asses No. | Procedures used | | Start Week No. | Subm. Week No. | Weighting of Asses. |
|--------------|-----------------|-------------------------------------|----------------|----------------|---------------------|
| | Type | To assess | | | |
| 1 | Notebook | Knowledge and practical skills . | 1 | 7 | 5% |
| 2 | Written exam. | Knowledge and understanding . | 7 | 7 | 10% |
| 3 | Notebook | Knowledge and practical skills . | 7 | 12 | 5% |
| | Exam | Knowledge and understanding . | 12 | 12 | 10% |
| | Final exam. | Knowledge and intellectual skills . | 16 | 16 | 20% |
| Total | | | | | 50% |

8- List of References:

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| a- Course Notes | Notes are handed out on a weekly basis. |
| b- Required Books (Textbooks) | <ul style="list-style-type: none"> • MOFFETT, Marian, FAZIO Michael, WOEHOUSE, Laurence, <i>A World History of Architecture</i>, Laurence Publishing, London, 2003. |
| c- Recommended Books | <p>(a) History:</p> <ul style="list-style-type: none"> • CRUIKSHANK, Dan, Sir Banister Fletcher's A History of Architecture, 20th ed., Architectural Press Books, Oxford, 1996. • MARDER, T.A., Bernini and the Art of Architecture, Abbeville Press, N.Y., 1998. • MURRAY, Peter, The Architecture of the Italian Renaissance, Thames & Hudson, London, 2007. • PICON, Antoine, French Architects and Engineering in the Age of Enlightenment, Cambridge University Pr., Cambridge, 1992. • PRINA Francesca & DEMARTINI Elena, 1000 Years of World Architecture, Thames & Hudson, London, 2006 , • TOMAN, Rolf, The Art of the Italian Renaissance, KÖNEMANN, Cologne, 1995. • ROTH. Leland M. Understanding Architecture. Icon Editions. 1998. • WATKIN David, A History of Western Architecture, 2nd Ed., Laurence King, London, 2000. <p>(b) Theory:</p> <ul style="list-style-type: none"> • CROFT, Catherine, Concrete Architecture, Laurence King Publishing Ltd, London, 2004. • HARRIS, J., PUI-K-LI, Kevin, Masted Structures in Architecture, 1996. • MCCARTHY, Richard C., Designing Better Libraries; Selecting and Working with Building Professionals, Fort Atkinson Higher School, Wisconsin, 1995. • NEUFERT, Ernest, Architect's Data, 2nd ed., Blackwell Science, London, 1980. • PRYCE, Will, Big Shed, Thames & Hudson, London, 2007. • SCHEUERMANNE, Rudi, BOXER, K., Tensile Architecture, British Library, 1996. • THOMPSON, Godfrey, Planning and Design of Library Buildings, 3rd ed., Butterworths, Oxford, 1989. • WELLS, Matthew, Skyscrapers, Structure and Design, Laurence King Publishing Ltd., London, 2005. • YAKAHIKO & TAK, Theaters & Halls, Meisei Publications, 1996. |
| d- Periodicals, Web Sites, etc. | N/A |