**Republic of Iraq**

**Ministry of Higher Education & Scientific Research**

**University of Baghdad**

**College of Engineering**

**Department of Civil Engineering**

**Academic Program Specification Form**

**For the Academic Year**

**2017-2018**



**TEMPLATE FOR COURSE SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAM REVIEW |

**COURSE SPECIFICATION**

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| This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification. |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Civil Engineering (CE) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **Mathematics/GE 101**  This course introduces:  Preliminaries: Polynomials and Rational Functions, Inverse Functions, Trigonometric and Inverse Trigonometric Functions, Exponential and Logarithmic Functions, Transformations of Functions.Limits and Continuity: The Concept of Limits, Computation of Limits, Continuity and Its Consequences, Limits Involving Infinity. Differentiation: Tangent Lines, The Derivative, Computation of Derivatives: The Power Rule, The Product and the Quotient Rules, The Chain Rule, Derivatives of Trigonometric Functions, Derivatives of Exponential and Logarithmic Functions, Implicit Differentiation and Inverse Trigonometric Functions, Applications of Derivatives: Linear Approximations, Indeterminate Forms and L’Hôpital’s Rule, Maximum and Minimum Values, Increasing and Decreasing Functions, Concavity and the Second Derivative Test, Overview of Curve Sketching, Optimization, Integration: Antiderivatives, The Definite Integral, The Fundamental Theorem of Calculus, Integration by Substitution, Applications of Definite Integral: Area Between Curves, Integration Techniques: Integration by Parts, Trigonometric Techniques of Integration, Integration of Rational Functions Using Partial Fractions, Improper Integrals, Matrices, liner system equations  The course is taught through 4 hrs. per week, 3 theoretical and 1 tutorial. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program (s) to which it Contributes*** |
| Annual System ; There is only one  mode of delivery, which is a “Day  Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017–2018 | ***6. Semester/Year*** |
| 120 hrs./4 hrs. per week | ***7. Number of hours tuition (total)*** |
| Oct.-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| 1. Introduce basic definition and explain the basic concepts that essential in connection with function and illustrate these concepts by examples. 2. Explain the purpose of function and their application. 3. Enable the student to solve the integration (finite and definite). 4. Introduce basic definition and explain the basic concepts of complex number. These series are a very powerful tool in connection with various problems. 5. Enable the student to calculate area and volume generated by revolving the area. | |

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| ***10·*** ***Learning Outcomes*** |
| At the end of the class, the student will be able to:   1. Definition any function. 2. Graph any function. 3. Derivative and integration any function. 4. Integration and application of integration. 5. Graph a complex number and determinate the roots. 6. Calculate the value of determinate. 7. Solved the system of equation using Crammers rule. 8. Determinate the dot and cross product. |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Lab. Experiments. 5. Tests and Exams. 6. Class Questions and Discussions. 7. Connection between Theory and Application. 8. Field Trips. 9. Extracurricular Activities. 10. Seminars. 11. In- and Out-Class oral conservations. 12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students, Questionnaire about  Curriculum and Faculty Member (Instructor). |
| ***13. Grading Policy***  1. Quizzes:  - There will be a (8 – 10) closed books and notes quizzes during the academic year.  - The quizzes will count 20% of the total course grade.  2. Tests, 2-3 Nos. and will count 10% of the total course grade.  3. Extracurricular Activities, this is optional and will count extra marks (1 – 5 %) for the student, depending on the type of activity.  4. Final Exam:  - The final exam will be comprehensive, closed books and notes, and will take place on June 2016 from 9:00 AM - 12:00 PM in Civil dept. class rooms.  - The final exam will count 70% of the total course grade. |

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| ***14. Course Structure*** | | | | | |
| Assessment  Method | Teaching  Method | Unit/Module or  Topic Title | LOs  (Article  10) | Hours | Week |
| 1 – 4 of article (12) | 1-12 of  article (11) | The interval and equalities | a | 4  3the.  1tut. | 1 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Introduction to function | a, b | 4  3the.  1tut. | 2 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Trigonometric and invers functions | a, b | 4  3the.  1tut. | 3 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Domain and range of Trigonometric functions | a, b | 4  3the.  1tut. | 4 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Graph of Trigonometric functions | a, b | 4  3the.  1tut. | 5 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Derivative of Trigonometric and functions | a, b, c | 4  3the.  1tut. | 6 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Integration of Trigonometric functions | a, b, d | 4  3the.  1tut. | 7 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Exponential functions | a, b | 4  3the.  1tut. | 8 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Domain and range of Exponential function | a, b | 4  3the.  1tut. | 9 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Graph of Exponential function | a, b | 4  3the.  1tut. | 10 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Derivative of Exponential function | a, b, c | 4  3the.  1tut. | 11 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Integration of Exponential function | a, b, d | 4  3the.  1tut. | 12 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Logarithmic functions | a, b | 4  3the.  1tut. | 13 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Domain and range of Logarithmic functions | a, b | 4  3the.  1tut. | 14 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Graph of Logarithmic functions | a, b | 4  3the.  1tut. | 15 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Derivative of Logarithmic functions | a, b, c | 4  3the.  1tut. | 16 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Integration of Logarithmic functions | a, b, d | 4  3the.  1tut. | 17 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Hyperbolic Trigonometric and invers functions | a, b | 4  3the.  1tut. | 18 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Domain and range of Hyperbolic functions | a, b | 4  3the.  1tut. | 19 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Graph of Hyperbolic functions | a, b | 4  3the.  1tut. | 20 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Derivative of Hyperbolic functions | a, b, c | 4  3the.  1tut. | 21 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Integration of Hyperbolic functions | a, b, d | 4  3the.  1tut. | 22 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Method of integration | c, d | 4  3the.  1tut. | 23 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Method of integration | c, d | 4  3the.  1tut. | 24 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Application of derivative | a, c | 4  3the.  1tut. | 25 |
| 1 – 4 of article (12) | 1-12 of  article (11) | The area | a, d | 4  3the.  1tut. | 26 |
| 1 – 4 of article (12) | 1-12 of  article (11) | The volume | a, d | 4  3the.  1tut. | 27 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Complex number | a, f, g | 4  3the.  1tut. | 28 |
| 1 – 4 of article (12) | 1-12 of  article (11) | The determinate and matrix | a, f, g | 4  3the.  1tut. | 29 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Liner system of equation | a, f, g,h | 4  3the.  1tut | 30 |

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| ***15. Infrastructure*** | | |
| **Textbook :**  Calculus by Thomas | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| / | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| / | Community-based facilities  (include for example, guest  Lectures, internship, field studies) | |
| ***16. Admissions*** | | |
| / | | Pre-requisites |
| 20 | | Minimum number of students |
| 25 per class | | Maximum number of students |
| **Instructor:**  **Lecturer Layla hashem helal**  Lecture of Mathematics  Department of Civil Engineering  University of Baghdad  Tel.: 00964-7902161442  Email: [laylsnim@yahoo.com](mailto:laylsnim@yahoo.com) | | ***17. Course Instructors*** |

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|  | ***1. Teaching Institution*** |
| Civil Engineering Department  (CED) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **Engineering Mechanics/CE 102**  This course introduces:   * Introduction   Definition to engineering mechanics and statics follow, system units, scalars and vectors quantities, fundamental concepts and basic laws like (mass, weight, force, rigid body, parallelogram law and Newton's laws), resolution of forces into components (two and three dimensions and principle of Moments and Couples   * Result of Force Systems   Result of Collinear forces system, coplanar forces system(concurrent, parallel and non-concurrent and non- parallel) and Non coplanar forces system (concurrent, parallel and non-concurrent and non-parallel)   * Equilibrium and Free-BodyDiagram   Conditions for Rigid-Body Equilibrium, Free-Body Diagram and, equations of equilibrium, two and three force members, analysis of Frames and Trusses in the Plane and analysis of Frames and Trusses in the Space   * Friction   Mechanism and laws of friction, static friction, kinetic friction   * Centroid and Centers of Gravity   Introduction of Centroids, Centroids by integration and Centroids of composite areas bodies   * Second moment of area or Moment of Inertia   Second moment of area by integration, Polar Moment of Inertia, and Products of Inertia, Mohr circle for second moment of inertia.   * General Principles in Engineering Mechanics/ Dynamics * Kinematics of a Particle   Introducing the relations between particles motion’s components including the particle’s position, velocity, and acceleration at any given time. These relations are then applied to rectilinear kinematics with continuous motion. Rectilinear kinematics in particles experiencing an erratic motion are then studied. The rectangular components of general curvilinear motion is then introduced. The motion of a projectile is then studied.   * Kinetics of a Particle: Force and Acceleration   Newton’s Second Law of motion is first introduced. Then, the equation of motion of a particle is studied. The rectangle components of the equation of motion of a particle are then studied.   * Kinetics of a Particle: Work and Energy   A brief study on the Work of a Force, principle of work and energy and conservation of energy are introduced.  The course is taught through 4 hrs. per week, 3 theoretical, 1 tutorial. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program(s) to which it Contributes*** |
| Annual System; There is only one mode of delivery, which is a “Day Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017–2018 | ***6. Semester/Year*** |
| 120 hrs./4 hrs. per week | ***7. Number of hours tuition (total)*** |
| Oct.-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| 1. Introduce basic definitions and introductory concepts of engineering mechanics/statics 2. Analyze forces and find out the resultant forces in two and three dimension 3. Differentiate between various type of supports and draw free-body-diagram, Compute the reaction force in simple structure (beam, frame, truss) 4. Obtain center of gravity and centroid for deferent engineering shapes & moment of inertia for deferent sections | |

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| ***10·*** ***Learning Outcomes*** |
| At the end of the class, the student will be able to:   1. Analyze forces and moments in two and three dimensions, 2. Find out the resultant forces in two and three dimensions 3. Draw free-body-diagram, Compute the reaction force in simple structure (beam, frame, truss) 4. Study Mechanism and laws of friction 5. Obtain and centroid for deferent engineering shapes. 6. Obtain moment of inertia for deferent engineering shapes 7. Understand the engineering applications that evolve dynamics. 8. Solve engineering problems involving objects moving along a linear path. 9. Simplify engineering problems involving objects moving along a curved path. 10. Recognize and deal with projectile problems. 11. Write the equation of motion of a moving object. 12. Solve problems involving the force in accelerated bodies. 13. Apply the theorem of conservation of energy to solve kinetic problems |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Lab. Experiments. 5. Tests and Exams. 6. In-Class Questions and Discussions. 7. Connection between Theory and Application. 8. Field Trips. 9. Extracurricular Activities. 10. Seminars. 11. In- and Out-Class oral conservations. 12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor). |
| ***13. Grading Policy***  In general, the *Static* part counts as **75**% of the total grade, while the *Dynamic* part counts as **25**% of the total grade. The grade distribution throughout the course is shown below:  **1. Quizzes:**  - There will be a (10 – 15) closed books and notes quizzes during the academic year.  - The quizzes will count **30%** of the total course grade (22.5% for Statics and 7.5% for Dynamics).  **2. Extracurricular Activities**  This is optional and will count extra marks (2.5 %) for the student, depending on the type of activity.  **3. Final Exam:**  - The final exam will be comprehensive, closed books and notes, and will take place on June 2018 from 9:00 AM - 12:00 PM in class rooms of the civil department.  - The final exam will count **70%** of the total course grade (52.5% for Statics and 17.5% for Dynamics). |

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| ***14. Course Structure*** | | | | | |
| Assessment  Method | Teaching  Method | Unit/Module or  Topic Title | LOs  (Article  10) | Hours | Week |
| 1 – 4 of article (12) | 1-12 of  article (11) | Introduction to engineering mechanics: statics | a | **4**  ***Statics***  3the. | 1 |
| Introduction to engineering mechanics: Dynamics | g | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Resolution of forces into components(two dimensions) | a | **4**  ***Statics***  2the.  1tut | 2 |
| General Principles in Engineering Mechanics/ Dynamics | g | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Resolution of forces into components(two dimensions) | a | **4**  ***Statics***  3the. | 3 |
| Kinematics of a Particle; Introduction | g | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Principle of Moments and Couples | a | **4**  ***Statics***  2the.  1tut | 4 |
| Kinematics of a Particle; Introduction | h | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Resolution of forces into components(three dimensions) | a | **4**  ***Statics***  3the. | 5 |
| Rectilinear Kinematics: Continuous Motion | h | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Principle of Moments and Couples (three dimensions) | a | **4**  ***Statics***  2the.  1tut | 6 |
| Rectilinear Kinematics: Continuous Motion | h | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Result of coplanar forces system(concurrent, parallel and non‐concurrent and non- parallel) | b | **4**  ***Statics***  3the. | 7 |
| Rectilinear Kinematics: Continuous Motion | h | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Result of coplanar forces system(concurrent, parallel and non‐concurrent and non- parallel) | b | **4**  ***Statics***  2the.  1tut | 8 |
| Rectilinear Kinematics: Erratic Motion | h | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Result of coplanar forces system(concurrent, parallel and non‐concurrent and non- parallel) | b | **4**  ***Statics***  3the. | 9 |
| Rectilinear Kinematics: Erratic Motion | h | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Result of Non coplanar forces system (concurrent, parallel and non‐concurrent and non- parallel) | b | **4**  ***Statics***  2the.  1tut | 10 |
| Rectilinear Kinematics: Erratic Motion | h | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Result of Non coplanar forces system (concurrent, parallel and non‐concurrent and non- parallel) | b | **4**  ***Statics***  3the. | 11 |
| Rectilinear Kinematics: Erratic Motion | h | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Equilibrium and Free-Body Diagram | c | **4**  ***Statics***  2the.  1tut | 12 |
| Curvilinear Motion: Rectangular Components | i | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Analysis of Frames in the Plane | c | **4**  ***Statics***  3the. | 13 |
| Curvilinear Motion: Rectangular Components | i | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Analysis of Frames in the Plane | c | **4**  ***Statics***  2the.  1tut | 14 |
| Curvilinear Motion: Motion of a Projectile | j | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Analysis of Frames in the Plane | c | **4**  ***Statics***  3the. | 15 |
| Curvilinear Motion: Motion of a Projectile | j | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Analysis of Trusses in the Plane | c | **4**  ***Statics***  2the.  1tut | 16 |
| Curvilinear Motion: Motion of a Projectile | j | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Analysis of Trusses in the Plane | c | **4**  ***Statics***  3the. | 17 |
| Curvilinear Motion: Motion of a Projectile | j | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Analysis of Frames and Truss in the Space | c | **4**  ***Statics***  2the.  1tut | 18 |
| Kinetics of a Particle Newton’s Second Law | k | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Friction | d | **4**  ***Statics***  3the. | 19 |
| Kinetics of a Particle The Equation of Motion | k | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Friction | d | **4**  ***Statics***  2the.  1tut | 20 |
| Kinetics of a Particle The Equation of Motion | k | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Friction | d | **4**  ***Statics***  3the. | 21 |
| Equations of Motion: Rectangular Coordinates | l | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Centroids by integration | e | **4**  ***Statics***  2the.  1tut | 22 |
| Equations of Motion: Rectangular Coordinates | l | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Centroids by integration | e | **4**  ***Statics***  3the. | 23 |
| Equations of Motion: Force and Acceleration | l | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Centroids of composite areas bodies | e | **4**  ***Statics***  2the.  1tut | 24 |
| Equations of Motion: Force and Acceleration | l | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Centroids of composite areas bodies | f | **4**  ***Statics***  3the. | 25 |
| Equations of Motion: Force and Acceleration | l | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Moment of Inertia by integration | f | **4**  ***Statics***  2the.  1tut | 26 |
| Equations of Motion: Force and Acceleration | l | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Moment of Inertia by integration | f | **4**  ***Statics***  3the. | 27 |
| Kinetics of a Particle: the work of a force | m | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Moment of Inertia of composite areas bodies | f | **4**  ***Statics***  2the.  1tut | 28 |
| Kinetics of a Particle: Principles of work and energy | m | ***Dyn.***  1tut. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Moment of Inertia of composite areas bodies | f | **4**  ***Statics***  3the. | 29 |
| Conservation of Energy | m | ***Dyn.***  1the. |
| 1 – 4 of article (12) | 1-12 of  article (11) | Polar Moment of Inertia, and Products of Inertia, Mohr circle | f | **4**  ***Statics***  2the.  1tut | 30 |
| Conservation of Energy | m | ***Dyn.***  1tut. |

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| ***15. Infrastructure*** | | |
| 1. Engineering Mechanics: Statics & Dynamics 13th edition. By R. C. Hibbeler, 2015 2. Engineering Mechanics: Statics 6th edition by J.L. Meriam & L.G. Kraige, 2007 3. Engineering Mechanics: Statics & Dynamics 3rd edition. By Archie Highdon & William B. Stiles, 1968 | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| Available websites related to the subject. | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| / | Community-based facilities  (include for example, guest  Lectures, internship, field studies) | |
| ***16. Admissions*** | | |
| / | | Pre-requisites |
| 20 | | Minimum number of students |
| 37 | | Maximum number of students |
| **Instructor:**  **Lecturer Dr. Ahmad Jabbar**  University of Baghdad  College of Engineering  Civil Engineering Department  Email : dr.ahmadalshimmeri@yahoo.com  **Asst. Lecturer Aqeel T. Fadhil**  University of Baghdad  College of Engineering  Civil Engineering Department  BAGE-mail: aqeel.fadhil@uobaghdad.edu.iq | | ***17. Course Instructors*** |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Civil Engineering Department  (CED) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **Engineering Drawing/CE 103**  This course introduces:  - Introduction.  This section produces an introduction to the drawing tools, pencil kinds, type of sheets …. etc.  - Geometric Typing.  Both English letters and numbers will be considered in this section.  - Lines.  A classification for all types of lines which used in engineering drawing will be submitted in this section (solid, dashed, chain…etc.). The section also introduced the common mistakes in the engineering drawing.  ‐ Geometric Processing.  The most important geometric processing, regarding to civil engineering, will be adopted in this section just like ellipsoid, tangent arcs, tangent arc and line, bisection process … etc.  ‐ Theory of Projection.  The concept of projection will be explained in this section using both first and third angle projection.  ‐ Pictorial Drawing.  ‐ Dimensions  The most common dimensions (straight, inclined, radios, curved, ..., etc.) will be considered.  ‐ Structural Drawing.  This section will include the details of foundation plan and typical sections.  The course is taught through 5 hrs. per week, 1theoretical, 4 experimental. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program(s) to which it Contributes*** |
| Annual System; There is only one mode of delivery, which is a “Day Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017–2018 | ***6. Semester/Year*** |
| 150 hrs./5 hrs. per week | ***7. Number of hours tuition (total)*** |
| Oct-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| This unit will enable learners to produce engineering drawings of different components, assemblies and circuits using a variety of sketching, drawing and computer-aided drafting techniques. | |

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| ***10·*** ***Learning Outcomes*** |
| At the end of the class, the student will be able to:   1. Sketch engineering components. 2. Interpret engineering drawings that comply with drawing standards. 3. Produce engineering drawings. |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Lab. Experiments. 5. Tests and Exams. 6. In-Class Questions and Discussions. 7. Connection between Theory and Application. 8. Field Trips. 9. Extracurricular Activities. 10. Seminars. 11. In- and Out-Class oral conservations. 12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students, Questionnaire about  Curriculum and Faculty Member (Instructor). |
| ***13. Grading Policy***  1- Quizzes  - There will be a (6 – 10) closed books and notes quizzes during the academic year.  - The quizzes will count 20% of the total course grade.  2- Classwork  -There will be a classwork sheet submitted at each lecture.  - The classwork will count 30% of the total course grade  3. Homework  -There will be a homework sheet submitted at each lecture.  - The homework will count 20% of the total course grade  3. Final Exam:  - The final exam will be comprehensive, closed books and notes, and will take place on June 2018 from 9:00 AM - 12:00 PM in Civil dept. class rooms.  - The final exam will count 30% of the total course grade |

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| ***14. Course Structure*** | | | | | |
| Assessment  Method | Teaching  Method | Unit/Module or  Topic Title | LOs  (Article  10) | Hours | Week |
| 1 – 4 of article (12) | 1-12 of  article (11) | Introduction | a | 5  1the.  4exp. | 1 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Geometric Typing | a | 5  1the.  4exp | 2 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Lines | a | 5  1the.  4exp | 3 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Lines | a | 5  1the.  4exp | 4 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Geometric Processing | a | 5  1the.  4exp | 5 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Geometric Processing | b, c | 5  1the.  4exp | 6 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Geometric Processing | b, c | 5  1the.  4exp | 7 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Theory of Projection | b, c | 5  1the.  4exp | 8 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Theory of Projection | b, c | 5  1the.  4exp | 9 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Theory of Projection | b, c | 5  1the.  4exp | 10 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Theory of Projection | b, c | 5  1the.  4exp | 11 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Theory of Projection | b, c | 5  1the.  4exp | 12 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Theory of Projection | b, c | 5  1the.  4exp | 13 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Theory of Projection | b, c | 5  1the.  4exp | 14 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Theory of Projection | b, c | 5  1the.  4exp | 15 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Dimensions | b, c | 5  1the.  4exp | 16 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Dimensions | b, c | 5  1the.  4exp | 17 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Sections | b, c | 5  1the.  4exp | 18 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Sections | b, c | 5  1the.  4exp | 19 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Sections | b, c | 5  1the.  4exp | 20 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Sections | b, c | 5  1the.  4exp | 21 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Pictorial Drawing | b, c | 5  1the.  4exp | 22 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Pictorial Drawing | b, c | 5  1the.  4exp | 23 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Pictorial Drawing | b, c | 5  1the.  4exp | 24 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Pictorial Drawing | b, c | 5  1the.  4exp | 25 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Pictorial Drawing | b, c | 5  1the.  4exp | 26 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Structural Drawing | b, c | 5  1the.  4exp | 27 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Structural Drawing | b, c | 5  1the.  4exp | 28 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Structural Drawing | b, c | 5  1the.  4exp | 29 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Structural Drawing | b, c | 5  1the.  4exp | 30 |

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| ***15. Infrastructure*** | | |
| ***Core Texts:***   * Engineering drawing by Abed Alrasul Al Khafaf, 1986.   ***References:***   * “Principle of technical drawing” by Frederick E. Giesecke, Alva Mitchell, Henry Cecil Spencer, Ivan Hill, John Thomas, James E. Novak, 1992.   “Graphics Drawing workbook” by Gray R. Bertoline, 2000 | | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER |
| / | | Special requirements (include for example workshops, periodicals, IT software, websites) |
| / | | Community-based facilities  (include for example, guest  Lectures, internship, field studies) |
| ***16. Admissions*** | | |
| / | Pre-requisites | |
| 23 | Minimum number of students | |
| 37 | Maximum number of students | |
| **Instructors:**  **Assistant Lecturer Adnan Najim**  Civil Engineering/StructuralEngineering  Civil. Engr. Dept.  College of Engineering  University of Baghdad  Tel: +00964-7736251754  Email: lazem1@yahoo.com  **Assistant Lecturer Roaa Hamed Latief**  Civil Engineering/Roads and TransportationEngineering  Civil. Engr. Dept.  College of Engineering  University of Baghdad  Tel: +00964-7703437141  Email: roaahamed47@yahoo.com  **Assistant Lecturer Aliaa Falah**  Civil Engineering/ Roads and TransportationEngineering  Civil. Engr. Dept.  College of Engineering  University of Baghdad  Tel: +00964-7902462817  Email: aliaa\_falah@yahoo.com  **Assistant Lecturer Ban Fadhil Salman**  Ass. Lecturer of Civil Engineering/Structural Engineering  Civil Engr. Dept.  College of Engineering  University of Baghdad  Tel: +00964-7706935003  Email: [ban.f\_2003@yahoo.com](mailto:ban.f_2003@yahoo.com)  **Teaching Assistant:**  **Assistant Lecturer Noor Samir**  Ass. Lecturer of Civil Engineering/Surveying Engineering  Civil Engr. Dept.  College of Engineering  University of Baghdad  Tel: +00964-7706935003  Email: [noorsamir1985@yahoo.com](mailto:noorsamir1985@yahoo.com) | ***17. Course Instructors*** | |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Civil Engineering Department  (CED) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **Engineering Geology/CE 104**  **Engineering Geology/CE 104**  This course introduces:   1. Introduction to Geology and Types of Geology   Introduction to Geology, Geomechanics and Geotechnical Engineering and their role in Civil engineering   1. Engineering Geology, Definition and applications    * Introduction to Engineering geology    * Application of engineering geology in civil engineering works.    * Explaining the difference between engineering geology and soil mechanic. 2. Earth, Definition and some applicable Factors  * Give a clear definition of the earth components * Earth crust: Properties and components.  1. Factors Affecting Earth Crust   In this subject, the presence of different factors that affecting the general properties of the earth crust is explained with the aid of typical actions such as temperature, rainfall and wind effects.   1. Minerals    * Introduction to minerals and explain their sources in the earth.    * Explanation of physical and chemical properties of mineral. 2. Rocks, Formation and types   The Rock Cycle - the role of magma, the formation and identification of igneous rocks.   1. Igneous Rocks:  * Formation and method of solidification of these rocks. * Classification of igneous rocks with respect to chemical composition, location and texture is presented.  1. Metamorphic Rock  * Formation and method of solidification of these rocks. * Metamorphism of different metamorphism agents (Thermal, Pressure, thermal and pressure and chemical metamorphism).  1. Sedimentary Rocks  * Formation and method of solidification, cementation and transportation. * Types, properties and classification of these rocks are presented.  1. Structural Geology for sedimentary rocks   Basic Structural Geological Formations for sedimentary rocks are presented. As well as, the vertical profile in formation layers is presented.   1. Physical and Mechanical Properties of Rocks  * Physical properties of the rocks are presented. * The physical properties includes (Mass density, unit weight, specific gravity, water content, porosity, void ratio…etc.). * The mechanical properties include normal forces, shear forces and uniaxial loading. * Different elastic properties are explained such as modulus of elasticity, Poisson’s ratio and shear modulus.  1. Factors affecting rock properties (river work, sea work, ice work…etc.)  * The weathering process, formation of sediments, formation and identification of sedimentary rocks and the formation and identification of metamorphic rocks. * The actions of the above factors are explained as a weathering factor and transportation agent.  1. **Soils and their formation**  * Engineering Properties and Classification of soils definition of soil (Clay, Silt, Sand, gravel). * The different types of soils according to their source of formation are presented.  1. **Physical and Mechanical Properties of Soils**  * In this subject the physical properties of the soil is presented. * The physical properties includes (Mass density, unit weight, total and dry unit weight, specific gravity, water content, porosity, degree of saturation, void ratio…etc.). * The mechanical properties include normal forces, shear forces, and uniaxial loading. * Different elastic properties are explained such as modulus of elasticity, Poisson’s ratio and shear modulus. * Effective Stress Law (Total stress, Effective Stress and Pore Pressures).  1. **Internal and external forces subjected to earth (such as Earthquake)**  * Introduction to the source of internal stress is presented. * The source of earthquake is also presented. * The effect of these force on the general topography and features of the earth crust is presented.  1. Geophysical Investigation  * Definition of geophysical investigations * Explanation of different methods related to this investigation is presented. * Foxing on the seismic investigation is explained.   The course is taught through 3 hrs. per week, 2 theoretical, 1 tutorial. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program(s) to which it Contributes*** |
| Annual System ; There is only one mode of delivery, which is a “Day  Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017–2018 | ***6. Semester/Year*** |
| 90 hrs./3 hours per week | ***7. Number of hours tuition (total)*** |
| Oct.-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| 1.Introduce basic definitions and introductory concepts general geology and engineering geology  2.Explain application of geology in civil engineering as well as the different types of geology  3.Define each type of the given minerals as well as their properties  4.Explanation of the factors that affecting the earth crust  5.Identify the different types of rocks with the structural geology of different rocks  6.study the physical and mechanical properties of rocks  7.Identify the different factors that affecting the rock properties  8.Calculating the normal stress and strain of rocks and soil samples  9.Identify soils and explain its physical and mechanical properties (Shear strength)  10.To classify the different soil types according to USCS  11.Identify all factors that affecting the earth crust and its components (internal and external forces)  12. Calculating the effective stresses, internal stresses and external stresses from footings.  13.To understand the concept of earthquakes.  14. To study the different types of waves.  15. To classify earthquake according to Mercalli or Richter scales  16.To understand the concept of geophysical investigations.  17.To understand the concept of geological map. | |

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| ***10·*** ***Learning Outcomes*** |
| 1. At the end of the class, the student will be able to: 2. The student would make a separation between general geology and engineering geology 3. The student will know the application of geology in civil engineering as well as the different types of geology 4. The student would be able to define each type of the given minerals as well as their properties 5. The student would be able to calculate the normal stress and strain of rocks and soil samples 6. The student would be able to identify soils and explain its physical and mechanical properties (Shear strength) 7. To classify the different soil types according to USCS 8. Identify all factors that affecting the earth crust and its components (internal and external forces) 9. Calculating the effective stresses, internal stresses and external stresses from footings. 10. To understand the concept of ground water 11. To understand the concept of geophysical investigations   i- To understand the concept of geological map |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures.  2. Tutorials.  3. Homework and Assignments.  4. Lab. Experiments.  5. Tests and Exams.  6. In-Class Questions and Discussions.  7. Connection between Theory and Application.  8. Field Trips.  9. Extracurricular Activities.  10. Seminars.  11. In- and Out-Class oral conservations.  12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students, Questionnaire about  Curriculum and Faculty Member (Instructor). |
| ***13. Grading Policy***  1.Quizzes:  There will be about (5-10) closed books and notes quizzes during the academic year. The quizzes will count 20% of the total course grade.  2.Tests  There will be about (1-2) closed books and notes quizzes during the academic and will count 10% of the total course grade.  3.Lab work  There will be count for 5% of the total course grade.4.Oral discussion during academic year  There will be count for 5% of the total course grade.  5.Final Exam:  The final exam will be comprehensive, closed books and Notes. The final exam will count 60% of the total course grade. |

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| ***14. Course Structure*** | | | | | |
| Assessment  Method | Teaching  Method | Unit/Module or  Topic Title | LOs  (Article  10) | Hours | Week |
| 1 – 4 of article (12) | 1-12 of  article (11) | Introduction to geology | b, c | 3  2 the.  1tut | 1 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Types of geology | b, c | 3  2 the.  1tut | 2 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Engineering geology (definition and applications) | b, c | 3  2 the.  1tut | 3 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Crystallography | b, c | 3  2 the.  1tut | 4 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Crystallography + types | b, c | 3  2 the.  1tut | 5 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Minerals (definition and occurrence) | b, c | 3  2 the.  1tut | 6 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Types of minerals | b, c | 3  2 the.  1tut | 7 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Types of minerals | b, c | 3  2 the.  1tut | 8 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Rocks (definition+ rock cycle) | b, c | 3  2 the.  1tut | 9 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Igneous rocks (Definition and types) | b, c | 3  2 the.  1tut | 10 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Igneous rocks(types | b, c | 3  2 the.  1tut | 11 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Sedimentary rocks  (Definition and types) | b, c | 3  2 the.  1tut | 12 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Sedimentary rocks  (types) | b, c | 3  2 the.  1tut | 13 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Metamorphic rocks (Definition and types) | b, c | 3  2 the.  1tut | 14 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Metamorphic rocks (types) | b, c | 3  2 the.  1tut | 15 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Structural Geology  (Faults) | b, c | 3  2 the.  1tut | 16 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Structural Geology  (folds) | b, c | 3  2 the.  1tut | 17 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Weathering of rocks | b, c | 3  2 the.  1tut | 18 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Erosion of rocks | a, b, c | 3  2 the.  1tut | 19 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Works of rivers and water | a, b, c | 3  2 the.  1tut | 20 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Works of air and glaciers | a, b, c | 3  2 the.  1tut | 21 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Work of sea and groundwater | a, b, c | 3  2 the.  1tut | 22 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Work of organics + river | a, b, c | 3  2 the.  1tut | 23 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Physical properties of rocks (applications) | a, b, c | 3  2 the.  1tut | 24 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Physical properties of rocks (applications) | a, b, c | 3  2 the.  1tut | 25 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Mechanical properties of rocks (applications) | a, b, c | 3  2 the.  1tut | 26 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Soil (formation and types) | a, b, c | 3  2 the.  1tut | 27 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Stresses within soil media and external stresses (point load) | a, b, c | 3  2 the.  1tut | 28 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Geotechnical and geological maps | a, b, c | 3  2 the.  1tut | 29 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Geotechnical and geological maps | a, b, c | 3  2 the.  1tut | 30 |

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| ***15. Infrastructure*** | | |
| * Notebook prepared by the instructor of the course * K. M. BANGAR (1995) :"A textbook of Geology: General and Engineering". Standard Publisher Distributors,Lumos Offset Press, Delhi, India. * MUNI BUDHU (2011):" Soil Mechanics and Foundations". 3rd edition, John Wily & Sons, Inc., USA.   Collection of sheets of solved and unsolved problems and Exams questions | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| * Available websites related to the subject.   Extracurricular activities. | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| * Field and scientific visits.   Extra lectures by foreign guest lecturers. | Community-based facilities  (include for example, guest  Lectures, internship, field studies) | |
| ***16. Admissions*** | | |
| GE 101Course | | Pre-requisites |
| 10 per standard classroom | | Minimum number of students |
| 40 per standard classroom | | Maximum number of students |
| **Instructors :**  **Lecturer Rana Mohammed Ameen**  Civil Eng. Dep.  College of Engineering  University of Baghdad  Tel. +009647901554733  Email: [misrerebright@yahoo.com](mailto:misrerebright@yahoo.com)  **Lecturer Ahmed Salman Jawad**  Civil Eng. Dep.  College of Engineering  University of Baghdad  Tel. +00964  Email: [ahmedsalman\_1987@yahoo.com](mailto:ahmedsalman_1987@yahoo.com) | | ***17. Course Instructors*** |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Civil Engineering Department  (CED) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **Materials science**/**GE 105**  This course introduces:  -Mechanical properties of materials, -bonding materials:  1- gypsum: manufacture, theory of calcination, products types and their properties and uses, physical properties .  2- Lime: manufacture, theory of calcination, products types and their properties and uses, physical properties  3-Bricks: raw materials, harmful ingredient, methods of manufacture, physical properties, products: clay brick, sand-lime brick, concrete brick.  4- Block: manufacture, properties, types of blocks and uses  5- tiles: manufacturing, properties, tests of tiles, types of tiles  6- wood: types of wood, mechanical properties of wood, defects of wood, seasoning of wood  7- metal: types of metal, cast iron, wrought iron, steel, mild steel, heat treatment, physical properties  The course is taught through 2 hrs. per week theatrically and 3 hrs. laboratory tests. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program(s) to which it Contributes*** |
| Annual System ; There is only one  mode of delivery, which is a “Day  Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017–2018 | ***6. Semester/Year*** |
| 150 hrs./5 hrs. per week | ***7. Number of hours tuition (total)*** |
| Oct.-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| 1. Introduce basic definition and explain the basic concepts that essential in connection with materials and illustrate these concepts by examples and tests. 2. Explain the uses of the materials and their applications. 3. Enable the student to analyze the material (chemically and physically). 4. Introduce basic definition and explain the basic concepts of materials available in the local market.   Enable the student to perform tests on the studied materials | |

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| ***10·*** ***Learning Outcomes***  At the end of the class, the student will be able to:   1. Define any building materials. 2. Graph basic relationships considering materials properties. 3. Know the raw and ingredients of the materials. 4. Tests materials for basic and most important experiments. 5. Know the standards related to the specifications of the materials. 6. Calculate the mathematic relations for some materials.   Specify the quality of good material theoretically and practically. |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Lab. Experiments. 5. Tests and Exams. 6. In-Class Questions and Discussions. 7. Connection between Theory and Application. 8. Field Trips. 9. Extracurricular Activities. 10. Seminars. 11. In- and Out-Class oral conservations. 12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students.  5. preparing reports about the lab tests |
| ***13. Grading Policy***  1. Quizzes:  - There will be a (8 – 10) closed books and notes quizzes during the academic year.  - The quizzes will count 30% of the total course grade.  2. Tests and reports in lab,7 exams. and will count 10% of the total course grade.  3. Extracurricular Activities, this is optional and will count extra marks (1 – 5 %) for the student, depending on the type of activity.  4. Final Exam:  - The final exam will be comprehensive, closed books and notes, and will take place on June 2016 from 9:00 AM - 12:00 PM in Civil dept. class rooms.  - The final exam will count 60% of the total course grade. |

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| ***14. Course Structure*** | | | | | | |
| Assessment method | Teaching method | Unit/Module or  Topic Title | LOs  (Article  10) | hours | Week | |
| 1-4 of article 11 | 1-12 of  article (11) | Introduction of Construction Materials Science   1. Types of building 2. Mechanical properties of materials 3. Materials properties | a,b,e,f,g,k | 3  1the.  1tut.  1exp. | 1 | |
| 1-4 of article 11 | 1-12 of  article (11) | Bonding Material-Gypsum plaster  1. Introduction of Gypsum plaster  2.Manufacture of  gypsum plaster  3.Gypsm products:  a. Plaster of Paris  b.Ordinary plaster  c.Technical plaster  d.Anhydrous plaster  e. Keen cement | b,c,g,h,I,k, | 3  1the.  1tut.  1exp. | 2 | |
| 1-4 of article 11 | 1-12 of  article (11) | Bonding Material-Lime  1. Definition and classification  a. Quick lime  b. Hydrated lime  2. Manufacture of lime - Theory of calcinations  3. Properties of quick lime  4. Properties of hydrated lime | b,d,e,f,j | 3  1the.  1tut.  1exp. | 3 | |
| 1-4 of article 11 | 1-12 of  article (11) | Bricks  Classification of bricks according to constituent raw material:  1. Clay bricks  1.1 Raw materials  1.2 Composition of good clay brick  1-3 Harmful ingredients in clay bricks  1.4 Manufacture of bricks:  1.5 Classification of clay bricks in accordance with Iraqi standard No. 25/1988 | a,c,d,e,I,k | 3  1the.  1tut.  1exp. | 4 | |
| 1-4 of article 11 | 1-12 of  article (11) | Bricks  1.6 Properties of bricks:  1.6.1 Compressive strength  1.6.2 Water absorption  1.6.3 Effloresce | a,b,f,g,I,k | 3  1the.  1tut.  1exp. | 5 | |
| 1-4 of article 11 | 1-12 of  article (11) | 2. Sand - Lime bricks:  .2 Mix proportion:  2.3 Manufacture:  2.4 Properties of lime sand brick  3. Concrete bricks  3.2 Properties of concrete bricks | a,b,e,f,g,k | 3  1the.  1tut.  1exp. | 6 | |
| 1-4 of article 11 | 1-12 of  article (11) | Blocks  1.Introduction | b,c,g,h,I,k, | 3  1the.  1tut.  1exp. | 7 | |
| 1-4 of article 11 | 1-12 of  article (11) | 2.Types of blocks | b,d,e,f,j | 3  1the.  1tut.  1exp. | 8 | |
| 1-4 of article 11 | 1-12 of  article (11) | 3.Manufactures of blocks | a,c,d,e,I,k | 3  1the.  1tut.  1exp. | 9 | |
| 1-4 of article 11 | 1-12 of  article (11) | 4.Uses of blocks | a,b,f,g,I,k | 3  1the.  1tut.  1exp. | 10 | |
| 1-4 of article 11 | 1-12 of  article (11) | -solid blocks  -hollow blocks | a,b,e,f,g,k | 3  1the.  1tut.  1exp. | 11 | |
| 1-4 of article 11 | 1-12 of  article (11) | -itonic blocks  -thermal blocks | b,c,g,h,I,k, | 3  1the.  1tut.  1exp. | 12 | |
| 1-4 of article 11 | 1-12 of  article (11) | -glass blocks  -hourdy blocks | b,d,e,f,j | 3  1the.  1tut.  1exp. | 13 | |
| 1-4 of article 11 | 1-12 of  article (11) | Tiles –Introduction  Classification | a,c,d,e,I,k | 3  1the.  1tut.  1exp. | 14 | |
| 1-4 of article 11 | 1-12 of  article (11) | Types & uses of tiles | a,b,f,g,I,k | 3  1the.  1tut.  1exp. | 15 | |
| 1-4 of article 11 | 1-12 of  article (11) | Manufacture of Tiles | a,b,e,f,g,k | 3  1the.  1tut.  1exp. | 16 | |
| 1-4 of article 11 | 1-12 of  article (11) | Timber  Classification of trees | b,c,g,h,I,k, | 3  1the.  1tut.  1exp. | 17 | |
| 1-4 of article 11 | 1-12 of  article (11) | Seasoning in wood | b,d,e,f,j | 3  1the.  1tut.  1exp. | 18 | |
| 1-4 of article 11 | 1-12 of  article (11) | Methods of wood seasoning | a,c,d,e,I,k | 3  1the.  1tut.  1exp. | 19 | |
| 1-4 of article 11 | 1-12 of  article (11) | Natural defects in timber | a,b,f,g,I,k | 3  1the.  1tut.  1exp. | 20 | |
| 1-4 of article 11 | 1-12 of  article (11) | Artificial defects in timber | a,b,e,f,g,k | 3  1the.  1tut.  1exp. | 21 | |
| 1-4 of article 11 | 1-12 of  article (11) | Mechanical properties of woods | b,c,g,h,I,k, | 3  1the.  1tut.  1exp. | 22 | |
| 1-4 of article 11 | 1-12 of  article (11) | Strength and moisture in wood | b,d,e,f,j | 3  1the.  1tut.  1exp. | 23 | |
| 1-4 of article 11 | 1-12 of  article (11) | Timber defects  -Shrinkage in timber  - Warping in timber  - Cheking in timber | a,c,d,e,I,k | 3  1the.  1tut.  1exp. | 24 | |
| 1-4 of article 11 | 1-12 of  article (11) | Metal  Properties of metals | a,b,f,g,I,k | 3  1the.  1tut.  1exp. | 25 | |
| 1-4 of article 11 | 1-12 of  article (11) | -Classification of steel due to carbon content | a,b,e,f,g,k | 3  1the.  1tut.  1exp. | 26 | |
| 1-4 of article 11 | 1-12 of  article (11) | -high carbon steel  -properties &uses | b,c,g,h,I,k, | 3  1the.  1tut.  1exp. | 27 | |
| 1-4 of article 11 | 1-12 of  article (11) | -low carbon steel  -properties &uses | b,d,e,f,j | 3  1the.  1tut.  1exp. | 28 | |
| 1-4 of article 11 | 1-12 of  article (11) | -factors affecting steel properties | a,c,d,e,I,k | 3  1the.  1tut.  1exp. | 29 | |
| 1-4 of article 11 | 1-12 of  article (11) | -heat treatment of steel | a,b,f,g,I,k | 3  1the.  1tut.  1exp. | 30 | |

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| ***15. Infrastructure*** | | |
| -Construction materials by zuhair Sakoo  -Concrete Technology by Chand  -Construction materials by Sersem  -developed reinforced concrete by R.N. Swamy  ACI (American concrete institute),ASTM(American standards for testing methods), BS (British standards | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| Laboratory experiments in the (materials  Lab) of the department.  Available websites related to the subject.  Extracurricular activities | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| Field and scientific visits.  Extra lectures by foreign guest lecturers | Community-based facilities  (include for example, guest  Lectures, internship, field studies) | |
| ***16. Admissions*** | | |
| / | | Pre-requisites |
| 20 | | Minimum number of students |
| 25 per class | | Maximum number of students |
| **Instructor:**  **Prof. Dr. Nada Mahdi Fawzi**  Civil Engineering Department College of Engineering  University of Baghdad  Email: [naljalawi@yahoo.com](mailto:mahdi_karkush@coeng.uobaghdad.edu.iq)  **Lecturer: ikram faraoun ahmed**  instructor of materials Engineering  Department of Civil Engineering  University of Baghdad  Tel.: 00964-7903243474  Email: [ikram\_f\_mulla@yahoo.com](mailto:ikram_f_mulla@yahoo.com) | | ***17. Course Instructors*** |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Civil Engineering Department  (CED) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **Engineering Statistics/CE 108**  This course introduces:  The Nature of Probability and Statistics, Frequency Distribution and Graphs, Data Description, Probability and Counting Rules, Discrete Probability Distribution, The Normal Distribution, Confidence Intervals and Sample Size, Hypothesis Testing, Testing the Difference between Two Means, Two Proportions, and Two Variances, Correlation and Regression, And Other Chi-Square Tests.  The course is taught through 2 hrs. per week, 1 theoretical, 1 tutorial. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program(s) to which it Contributes*** |
| Annual System; There is only one mode of delivery, which is a “Day Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017–2018 | ***6. Semester/Year*** |
| 60 hrs./2 hrs. per week | ***7. Number of hours tuition (total)*** |
| Oct.-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| This course aims introduce statistics and its applications for science and engineering students. It helps students :   1. Solve some practical problems by statistical methods. 2. Develop their skills in thinking. 3. Analyzing problems from a probabilistic. 4. Statistical point of view. 5. Provide the engineer with both descriptive and analytical methods for dealing with the variability in observed data. 6. How engineers use statistical methodology as part of the engineering problem-solving process. | |

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| ***10·*** ***Learning Outcomes*** |
| 1. Determine measure of central tendency and variation from a data set, and estimate Population parameters. 2. Identify the distribution of a random variable (discrete or continuous) of interest in an experiment, and calculate the probability that the random variable can take on certain values. 3. Conduct hypothesis testing and construct confidence intervals for the population mean, variance, or proportion (one sample and two samples). 4. Apply the principles of linear regression to predict the outcomes of certain experiment parameters. |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Lab. Experiments. 5. Tests and Exams. 6. In-Class Questions and Discussions. 7. Connection between Theory and Application. 8. Field Trips. 9. Extracurricular Activities. 10. Seminars. 11. In- and Out-Class oral conservations. 12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students, Questionnaire about  Curriculum and Faculty Member (Instructor). |
| ***13. Grading Policy***   1. Quizzes: the quizzes will count 10% of the total grade 2. Test : the tests will count 20% of the total grade 3. Final Exam: the will count 70% of the total grade |

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| ***14. Course Structure*** | | | | | |
| Assessment  Method | Teaching  Method | Unit/Module or  Topic Title | LOs  (Article  10) | Hours | Week |
| 1 – 4 of article (12) | 1-12 of  article (11) | The Nature of Probability and Statistics | a | 2  1the.  1tut. | 1 |
| 1 – 4 of article (12) | 1-12 of  article (11) | The Nature of Probability and Statistics | a | 2  1the.  1tut | 2 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Frequency Distribution and Graphs | a | 2  1the.  1tut | 3 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Frequency Distribution and Graphs | a | 2  1the.  1tut | 4 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Frequency Distribution and Graphs | a | 2  1the.  1tut | 5 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Data Description | a | 2  1the.  1tut | 6 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Data Description | a | 2  1the.  1tut | 7 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Probability and Counting Rules | a | 2  1the.  1tut | 8 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Probability and Counting Rules | a | 2  1the.  1tut | 9 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Discrete Probability Distribution | a | 2  1the.  1tut | 10 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Discrete Probability Distribution | a | 2  1the.  1tut | 11 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Discrete Probability Distribution | a | 2  1the.  1tut | 12 |
| 1 – 4 of article (12) | 1-12 of  article (11) | The Normal Distribution | a | 2  1the.  1tut | 13 |
| 1 – 4 of article (12) | 1-12 of  article (11) | The Normal Distribution | a | 2 (1the.  1tut) | 14 |
| 1 – 4 of article (12) | 1-12 of  article (11) | The Normal Distribution | a | 2  1the.  1tut | 15 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Confidence Intervals and Sample Size | a | 2  1the.  1tut | 16 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Confidence Intervals and Sample Size | a | 2  1the.  1tut | 17 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Confidence Intervals and Sample Size | a | 2  1the.  1tut | 18 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Hypothesis Testing | a | 2  1the.  1tut | 19 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Hypothesis Testing | a | 2  1the.  1tut | 20 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Testing the Difference between Two Means, Two Proportions, and Two Variances | a | 2  1the.  1tut | 21 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Testing the Difference between Two Means, Two Proportions, and Two Variances | a | 2  1the.  1tut | 22 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Testing the Difference between Two Means, Two Proportions, and Two Variances | a | 2  1the.  1tut | 23 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Testing the Difference between Two Means, Two Proportions, and Two Variances | a | 2  1the.  1tut | 24 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Correlation and Regression | a | 2  1the.  1tut | 25 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Correlation and Regression | c | 2  1the.  1tut | 26 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Correlation and Regression | c | 2  1the.  1tut | 27 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Other Chi-Square Tests | d | 2  1the.  1tut | 28 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Other Chi-Square Tests |  | 2  1the.  1tut | 29 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Other Chi-Square Tests | d | 2  1the.  1tut | 30 |

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| ***15. Infrastructure*** | | |
| * Elementary Statistics: A step by step approach, by Allan G. Bluman, 6th edition * Statistics for Engineering and Sciences, by William Mendenhall and William Mendenhall, 5th edition. * Applied Statistics and Probability for Engineers, 3rd Edition, by Douglas C. Montgomery and George C. Runger. | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| / | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| / | Community-based facilities  (include for example, guest  Lectures, internship, field studies) | |
| ***16. Admissions*** | | |
| GE 101 Course | | Pre-requisites |
| 25 | | Minimum number of students |
| 25 | | Maximum number of students |
| **Instructor:**  **Assistant Lecturer Omar Khaleel Ismael**  Civil Eng. Depart  College of Engineering  University of Baghdad  Tel: +964 (7901)-701-165  Email:  [Omar.K.Ismael@coeng.uobaghdad.edu.iq](mailto:Omar.K.Ismael@coeng.uobaghdad.edu.iq) | | ***17. Course Instructors*** |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Civil Engineering Department  (CED) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **Computer Programming/GE 109**  This course introduces:  1. Introduction to computers and historical review.  2. Introduction to programming languages.  Basic language [Algorithms and flow chart, Data Types, Constant and Variables, Expressions and Assignment (arithmetic, logical, characteristic, relational), Operators (arithmetic operators, logical operators, rules of logical operators, string operators, relational operators), Library Functions, Input and Output Commands, Conditional Statement, Loops and Counters, Arrays and Matrices, Subroutines (subprogram), Format Statement (printing).    The course is taught through 4 hrs. per week, 2 theoretical, 2 experimental. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program(s) to which it Contributes*** |
| Annual System ; There is only one  mode of delivery, which is a “Day  Program”. The students are full time  students, and on campus. They attend  full day program in face-to-face  mode. The academic year is  composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017-2018 | ***6. Semester/Year*** |
| 120 hrs./4 hrs. per week | ***7. Number of hours tuition (total)*** |
| Oct.-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| 1. Introduce the History of Computing and Decimal numbering systems and bilateral. 2. Introduce the Algorithms and flowcharts. 3. Explain the Quick Basic programming languages as follows:    1. Constant, variable, input, output.    2. Mathematical expressions and library functions.    3. Control statements (GOTO, ON…GOTO, IF statement).    4. Counters, loops and the FOR - NEXT statements.   3.5 Selected case.   * 1. Matrices and Arrays   2. Defined Functions, subroutine and subprogram.   3. Format statement.  1. Introduce students to the computer’s hardware 2. Windows system. 3. Microsoft Word. 4. Microsoft Excel.   Microsoft Power Point. | |

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| ***10·*** ***Learning Outcomes*** |
| At the end of the class, the student will be able to:  a. Learning  how to transform the numbers from decimal to binary system and from binary to decimal system.  b. Learning how to write the algorithms and how to draw the flowchart sketches.  c. Learning how to deal with the numerical and string constant and variable.  d. Learning the types of input and output statements  e. Learning the mathematical expressions and library functions in the Basic Language.  f. Learning how to use the control statements (GOTO, ON...GOTO, IF statements) to make the conditions in the programs.  g. Learning how to use the Counters, loops and the FOR - NEXT statements in the series programming.  h. Learning how to use the (Selected case) in programming.  i. Learning how to create matrix, the mathematical operation and the properties of matrices.  j. Learning how to arrange the elements of matrix ascending or descending.  k. Learning how to change the locations of the matrix elements and Learning how to create two-dimensional matrix, the mathematical operation and the properties of matrices.  l. Learning how to use the Defined Functions, subroutine and subprogram in the programs.  m. Learning the types of Format statement.  n. Introduce students to the computer’s hardware  o. Introducing the student on how to use Microsoft WORD software  p. Introducing the student on how to use Microsoft EXCIL software  q. Introducing the student on how to use Microsoft POWER POINT software. |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Lab. Experiments. 5. Tests and Exams. 6. In-Class Questions and Discussions. 7. Connection between Theory and Application. 8. Field Trips. 9. Extracurricular Activities. 10. Seminars. 11. In- and Out-Class oral conservations. 12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students, Questionnaire about  Curriculum and Faculty Member (Instructor). |
| ***13. Grading Policy***  1.Quizzes  There will be a (10-12) close books quizzes during the academic year.  These quizzes will count 30% of the total course grade.  2. Extracurricular Activities  This is optional and will count 10% of the total course grade depending on the type of activity.  3. Final Exam  The final exam will be comprehensive, closed books and will take place on June 2016 from 9:00 AM-12:00 PM. In Civil dept. class rooms.  This exam will count 60% of the total course grade. |

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| ***14. Course Structure*** | | | | | |
| Assessment  Method | Teaching  Method | Unit/Module or  Topic Title | LOs  (Article  10) | Hours | Week |
| 1 – 4 of article (12) | 1-12 of  article (11) | History of Computing and Decimal numbering systems and bilateral  & computers hardware | a, n | 4  2 the.  2tut | 1 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Algorithms and flowcharts  Windows, start menu | b, n | 4  2 the.  2tut | 2 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Basic language programming - variables and constants  Desktop, search, screen saver, control panels | c, n | 4  2 the.  2tut | 3 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Mathematical expressions and library functions  Applications on Quick Basic | a, b, c | 4  2 the.  2tut | 4 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Input statement  Quiz  Applications on Quick Basic | c, d | 4  2 the.  2tut | 5 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Output statements and printing  Office-word-starting, tools, format, insert  Quiz | d, o | 4  2 the.  2tut | 6 |
| 1 – 4 of article (12) | 1-12 of  article (11) | CLS, REM sentences  Office-word-starting, tools, format, insert | e, o | 4  2 the.  2tut | 7 |
| 1 – 4 of article (12) | 1-12 of  article (11) | control statements(GOTO, ON...GOTO, IF statements)  Header, footer, border, paragraph | f, o | 4  2 the.  2tut | 8 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Counters  Quiz | g | 4  2 the.  2tut | 9 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Quiz  Create Pdf, print | l | 4  2 the.  2tut | 10 |
| 1 – 4 of article (12) | 1-12 of  article (11) | loops and series  Applications on Quick Basic | g | 4  2 the.  2tut | 11 |
| 1 – 4 of article (12) | 1-12 of  article (11) | the FOR - NEXT statements in the series  Applications on Quick Basic | g | 4  2 the.  2tut | 12 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Quiz | g | 4  2 the.  2tut | 13 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Selected case  Applications on Quick Basic | h | 4  2 the.  2tut | 14 |
| 1 – 4 of article (12) | 1-12 of  article (11) | DO …LOOP statement Applications on Quick Basic | g | 4  2 the.  2tut | 15 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Quiz | g | 4  2 the.  2tut | 16 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Matrices and Arrays  Office-Excel- starting, worksheets | I, p | 4  2 the.  2tut | 17 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Mathematical operation and the properties of matrices.  Equations, functions, graphs | J, p | 4  2 the.  2tut | 18 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Ascending and descending order  Tools properties, insert | j, p | 4  2 the.  2tut | 19 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Diagonals, row and columns, triangles properties.  Tutorials | k, p | 4  2 the.  2tut | 20 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Change the locations of the matrix elements  Quiz | k | 4  2 the.  2tut | 21 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Applications on Quick Basic | k | 4  2 the.  2tut | 22 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Operations on Tow dimensional array  Office-Power Point- starting new, slides | k, q | 4  2 the.  2tut | 23 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Multiplication on Tow dimensional array  View types, insert | k, q | 4  2 the.  2tut | 24 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Creating the largest and smallest element  Tutorials | k, q | 4  2 the.  2tut | 25 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Quiz | k, q | 4  2 the.  2tut | 26 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Defined Functions  Applications on Quick Basic | l | 4  2 the.  2tut | 27 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Subroutine and subprogram in the programs.  Applications on Quick Basic | l | 4  2 the.  2tut | 28 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Format statement  Applications on Quick Basic | m | 4  2 the.  2tut | 29 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Quiz | m | 4  2 the.  2tut | 30 |

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| ***15. Infrastructure*** | | |
| **References:**  1-Programming with Quick Basic –Salah R. Hamza  2-Basic language programming - Mehdi Fadel  3- Basic language programming - Salah Messenger Hamza  4- BASIC practical for personal computers - Aladdin Shamsuddin  5-Basic (Robert L. Albercht)  6- An Introduction to Computer Science and Programming with Basic Language-Salam Al-Ammri. | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| / | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| / | Community-based facilities  (include for example, guest  Lectures, internship, field studies) | |
| ***16. Admissions*** | | |
| GE 101 Course | | Pre-requisites |
| 20 | | Minimum number of students |
| 45 | | Maximum number of students |
| ***Instructor* :**  **Teaching Assistant:**  **Ass. Lecturer Mustafa Malik Jasim**  Civil Engineering/Soil Mechanical  Engineering  Civil Engineering Department  University of Baghdad  Email: geotechnicalbaghdad2006@yahoo.com | | ***17. Course Instructors*** |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Civil Engineering Department  (CED) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **English Languages/GE 111**  This course introduces:  Grammar, Vocabulary, and Skill Work (writing and listening) for Every day English.  The course is taught through 2 hrs. per week, 1 theoretical, 1 tutorial. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program(s) to which it Contributes*** |
| Annual System; There is only one mode of delivery, which is a “Day Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017–2018 | ***6. Semester/Year*** |
| 60 hrs./2 hrs. per week | ***7. Number of hours tuition (total)*** |
| Oct.-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| A- A great deal of successful language learning comes from experiences in which the learning is largely unconscious.  B- This course aimed to make the student’s interest in the career information presented will increase his or her ability to communicate more easily in English. | |

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| ***10·*** ***Learning Outcomes*** |
| 1. This Course is to introduce the student to the particular vocational area in which he or she is involved. 2. The duties of different kinds of jobs are discussed, as well as the problems that might be encountered at work. 3. Different phases of the civil engineering filed are discussed, together with some of the methods involved in designing structures for a number of different purposes. 4. The aptitudes and education that an engineer must have are also discussed, as well as some of the specific job areas in which he or she may work.   e. This course will be an introduction to the different kinds of work in the field of civil engineering. |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures.  2. Tutorials.  3. Homework and Assignments.  4. Lab. Experiments.  5. Tests and Exams.  6. In-Class Questions and Discussions.  7. Connection between Theory and Application.  8. Field Trips.  9. Extracurricular Activities.  10. Seminars.  11. In- and Out-Class oral conservations.  12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students, Questionnaire about  Curriculum and Faculty Member (Instructor). |
| ***13. Grading Policy***   * Quiz per week and with average of these quizzes will be on 30% from the overall score. * Final exam of 70% scores. * The final score will be the summation of the average of quizzes and the final exam score. |

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| ***14. Course Structure*** | | | | | |
| Assessment  Method | Teaching  Method | Unit/Module or  Topic Title | LOs  (Article  10) | Hours | Week |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 1 | a, b | 2  1the.  1tut. | 1 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 1 | a, b | 2  1the.  1tut | 2 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 2 | a, b | 2  1the.  1tut | 3 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 2 | b, c, d, e | 2  1the.  1tut | 4 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 3 | b, c, d, e | 2  1the.  1tut | 5 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 3 | b, c, d, e | 2  1the.  1tut | 6 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 4 | b, c, d, e | 2  1the.  1tut | 7 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 4 | b, c, d, e | 2  1the.  1tut | 8 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 5 | b, c, d, e | 2  1the.  1tut | 9 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 5 | b, c, d, e | 2  1the.  1tut | 10 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 6 | b, c, d, e | 2  1the.  1tut | 11 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 6 | b, c, d, e | 2  1the.  1tut | 12 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 7 | b, c, d, e | 2  1the.  1tut | 13 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 7 | b, c, d, e | 2  1the.  1tut | 14 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Presentations | b, c, d, e | 2  1the.  1tut | 15 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Presentations | b, c, d, e | 2  1the.  1tut | 16 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 8 | b, c, d, e | 2  1the.  1tut | 17 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 8 | b, c, d, e | 2  1the.  1tut | 18 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 9 | b, c, d, e | 2  1the.  1tut | 19 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 9 | b, c, d, e | 2  1the.  1tut | 20 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 10 | b, c, d, e | 2  1the.  1tut | 21 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 10 | b, c, d, e | 2  1the.  1tut | 22 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 11 | b, c, d, e | 2  1the.  1tut | 23 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 11 | b, c, d, e | 2  1the.  1tut | 24 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 12 | b, c, d, e | 2  1the.  1tut | 25 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 12 | b, c, d, e | 2  1the.  1tut | 26 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 13 | b, c, d, e | 2  1the.  1tut | 27 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 13 |  | 2  1the.  1tut | 28 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 14 |  | 2  1the.  1tut | 29 |
| 1 – 4 of article (12) | 1-12 of  article (11) | Chapter 14 |  | 2  1the.  1tut | 30 |

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| ***15. Infrastructure*** | | |
| **Textbook:** New Headway Plus (Beginner Student’s Book and Student’s Workbook with Key), by John and Liz Soars | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| Available websites related to the subject | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| / | Community-based facilities  (include for example, guest  Lectures, internship, field studies) | |
| ***16. Admissions*** | | |
| Depending on English courses taken in secondary school | | Pre-requisites |
| 25 | | Minimum number of students |
| 25 | | Maximum number of students |
| **Instructor:**  **Assistant Lecturer Omar Khaleel Ismael**  Civil Eng. Depart.  College of Engineering  University of Baghdad  Tel: +964 (7901)-701-165  Email:  [Omar.K.Ismael@coeng.uobaghdad.edu.iq](mailto:Omar.K.Ismael@coeng.uobaghdad.edu.iq) | | ***17. Course Instructors*** |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Civil Engineering Department  (CED) | ***2. University Department/Centre*** |
| **FIRST YEAR**  **Arabic Language** /**GE 113**  This course introduces:  اللغة العربية منشأها وتطورها, مصطلحات في اللغة العربية, بعض الاخطاء الشائعة في اللغة العربية, نوادر في اللغة العربية, قصائد ادبية, قصائد جاهلية, قصائد اسلامية, قصائد عباسية, قصائد اندلسية, قصائد حديثة, بعض الدراسات البلاغية والنحوية في القران الكريم, مواضع الهمزة في اللغة العربية, الضاد والظاء في اللغة, علامات الترقيم, مستويات النظام اللغوي, اقسام الجملة في اللغة العربية, الاسلوب وأنواعه, القواعد الصرفية, الترادف, الاضداد, الاشتقاق, العدد تعريفه ،اقسامه, نشاة النحو عند العرب  The course is taught through 3 hrs. per week, 2 theoretical, 1 tutorial. | ***3. Course title/code & Description*** |
| Civil Engineering (CE) | ***4. Program(s) to which it Contributes*** |
| Annual System; There is only one mode of delivery, which is a “Day Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st and 2nd/Academic Year 2017–2018 | ***6. Semester/Year*** |
| 90 hrs./3 hrs. per week | ***7. Number of hours tuition (total)*** |
| Oct.-26/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| 1- أن ينشأ الطالب على حب اللغة العربية. لغة القرآن الكريم. 2- أن يكتسب الطالب القدرة على استعمال اللغة استعمالاً صحيحاً في الاتصال بالآخرين عن طريق التحدث والكتابة والاستماع والقراءة. مما ييسر لهم أمورهم ويعينهم على قضاء حوائجهم ومصالحهم. 3- أن يتزود الطالب بما يساعدهم على الاستفادة من أوقات فراغهم عن طريق القراءة والاطلاع. 4- أن يكتسب الطلبة القدرة على التعبير عن أنفسهم وما يقع تحت حواسهم نطقاً وكتابةً. 5- أن يتزود الطالب بثروة لغوية عن طريق تزويدهم ببعض الألفاظ والتراكيب. 6- أن يكتسب الطلبة القدرة على التعبير عن أنفسهم من خلال المهارات اللغوية المتصلة بــ: التحدث \_ القراءة \_ الاستماع \_ الكتابة. 7- تنمية الميل إلى القراءة والمطالعة لدى الطلبة. 8- التعرف على مواطن الجمال في اللغة العربية وآدابها. 9- أن يكتسب الطالب القدرة على دراسة فروع اللغة العربية :\_ النحو \_ القراءة \_ الأناشيد (المحفوظات) \_ الإملاء \_ التعبير \_ الخط. 10- أن يتدرب الطالب على التعبير الصحيح عن معنى ما يقرأ أو يسمع | |

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| ***10·*** ***Learning Outcomes*** |
| 1- تدريب الطلبة على سلامة النطق وحسن الإلقاء والتعبير بنبرات صوتية واضحة.و تعويدهم على مواجهة المواقف بشجاعة ، وبث فيهم الثقة بالنفس.وغرس القدرة على فهم ما يقرؤون وما يسمعون في سرعة ودقة. و تزويدهم بكثير من الألفاظ والتراكيب والجمل والأساليب وتنمي ثروتهم اللغوية وتزيد ثقافتهم.- وتكسب الطلبة عادة حب القراءة ومصاحبة الكتاب. تنمية الحصيلة اللغوية لدى الطالب وذلك بتزويده بالمفردات والتراكيب والعبارات الجديدة.- وتنمية القدرة على تتبع ما يسمع ، مع فهمه فهماً صحيحاً ونقده والانتفاع به.   2- تدريب الطلبة على كتابة الكلمات كتابة صحيحة ، وتثبيت صــــورها في أذهان الطلبة والقدرة على استعادة تلك الصور عند الكتابة. وتعويدهم على الانتباه وقوة الملاحظة والدقة والترتيب والتنسيق. وتدريب حواسهم على الإجادة والإتقان وهذه الحواس هي:\_ الأذن التي تسمع واليد التي تكتب والعين التي تبصر الجواب وهذا يساعد على اختبار معلومات الطلبة وتنمية قدراتهم على التعبير وتنمية المهارة الكتابية غير المنظورة لديهم 3- تحقيق التكامل في تدريس اللغة العربية بحيث تخدم الإمــــــــــــــلاء فروع اللغة العربية الأخرى وإثراء الثروة المعرفية لديهم التي تزوده بها النصــوص الإملائية الهادفة و تدريبهم على إدراك الفروق الدقيقة بين الحروف المتقاربة المخارج.  4- تقويم ألسنة الطلبة ،ووقايتهم من الخطأ ، وتكوين عادات لغوية سليمة تمكنهم من استعمال الألفاظ والجمل استعمالاً صحيحاً خالياً من الأخطاء النحوية التي تذهب بجمال الكلام وروعته.وتعويدهم على دقة الملاحظة ،والتمييز بين الخطأ والصواب فيما يسمعون أو يقرؤون وإدراك وظائف الكلمات في الجمل مما يساعد على فهم مواقعها المختلفة فضلا عن إيقاف الطلبة على أوضاع اللغة وصيغها ؛ لأن قواعد النحو تعد وصفاً علمياً لتلك الأوضاع والصيغ وتبين التغييرات التي تحدث للألفاظ في مواقعها المختلفة.  5- القدرة على توضيح الأفكار باستخدام الكلمات المناسبة والأسلوب المناسب.و تنمية قدرة الطالب على تنسيق عناصر الفكرة المعبر عنها مما يضفي عليها جمالاً وقوةً تؤثر في السامع والقارئ.و تنمية قدرة الطالب على نقل وجهة نظره إلى غيره.تنمية التفكير وتنشيطه وتنظيمه والعمل على تغذية خيال الطالب بعناصر النمو والابتكار. |
| ***11.*** ***Teaching and Learning Methods*** |
| |  | | --- | | 1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Lab. Experiments. 5. Tests and Exams. 6. In-Class Questions and Discussions. 7. Connection between Theory and Application. 8. Field Trips. 9. Extracurricular Activities. 10. Seminars. 11. In- and Out-Class oral conservations. 12. Reports, Presentations, and Posters. | |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Extracurricular Activities.  3. Student Engagement during Lectures.  4. Responses Obtained from Students, Questionnaire about  Curriculum and Faculty Member (Instructor). |
| ***13. Grading Policy***  Divide the class in the school year, 30% on semesters so that the proportion of 15% on the first course and 15% on the second course is divided as follows:  5% on research carried out by students from the article. And 10% written examination.  The proportion of 70% will be on the final exam. |

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| ***14. Course Structure*** | | | | | |
| Assessment  Method | Teaching  Method | Unit/Module or  Topic Title | LOs  (Article  10) | Hours | Week |
| 1 – 4 of article (12) | 1-12 of  article (11) | -اللغة العربية منشأها وتطورها | 1 | 3  2 the.  1tut | 1 |
| 1 – 4 of article (12) | 1-12 of  article (11) | مصطلحات في اللغة العربية | 1, 2 | 3  2 the.  1tut | 2 |
| 1 – 4 of article (12) | 1-12 of  article (11) | بعض الاخطاء الشائعة في اللغة العربية | 1, 2 | 3  2 the.  1tut | 3 |
| 1 – 4 of article (12) | 1-12 of  article (11) | نوادر في اللغة العربية | 1, 2 | 3  2 the.  1tut | 4 |
| 1 – 4 of article (12) | 1-12 of  article (11) | قصائد ادبية | 1, 5 | 3  2 the.  1tut | 5 |
| 1 – 4 of article (12) | 1-12 of  article (11) | قصائد جاهلية | 1, 5 | 3  2 the.  1tut | 6 |
| 1 – 4 of article (12) | 1-12 of  article (11) | قصائد اسلامية | 1, 5 | 3  2 the.  1tut | 7 |
| 1 – 4 of article (12) | 1-12 of  article (11) | قصائد عباسية | 1, 5 | 3  2 the.  1tut | 8 |
| 1 – 4 of article (12) | 1-12 of  article (11) | قصائد اندلسية | 1, 5 | 3  2 the.  1tut | 9 |
| 1 – 4 of article (12) | 1-12 of  article (11) | قصائد حديثة | 1, 5 | 3  2 the.  1tut | 10 |
| 1 – 4 of article (12) | 1-12 of  article (11) | بعض الدراسات البلاغية والنحوية في القران الكريم | 2, 3, 4 | 3  2 the.  1tut | 11 |
| 1 – 4 of article (12) | 1-12 of  article (11) | بعض الدراسات البلاغية والنحوية في القران الكريم | 2, 3, 4 | 3  2 the.  1tut | 12 |
| 1 – 4 of article (12) | 1-12 of  article (11) | مواضع الهمزة في اللغة العربية | 4 | 3  2 the.  1tut | 13 |
| 1 – 4 of article (12) | 1-12 of  article (11) | الضاد والظاء في اللغة | 3, 4 | 3  2 the.  1tut | 14 |
| 1 – 4 of article (12) | 1-12 of  article (11) | علامات الترقيم | 4 | 3  2 the.  1tut | 15 |
| 1 – 4 of article (12) | 1-12 of  article (11) | علامات الترقيم | 4 | 3  2 the.  1tut | 16 |
| 1 – 4 of article (12) | 1-12 of  article (11) | مستويات النظام اللغوي | 5 | 3  2 the.  1tut | 17 |
| 1 – 4 of article (12) | 1-12 of  article (11) | اقسام الجملة في اللغة العربية | 1, 2 | 3  2 the.  1tut | 18 |
| 1 – 4 of article (12) | 1-12 of  article (11) | الاسلوب وأنواعه | 5 | 3  2 the.  1tut | 19 |
| 1 – 4 of article (12) | 1-12 of  article (11) | القواعد الصرفية | 1, 2 | 3  2 the.  1tut | 20 |
| 1 – 4 of article (12) | 1-12 of  article (11) | الترادف | 1, 2,3 | 3  2 the.  1tut | 21 |
| 1 – 4 of article (12) | 1-12 of  article (11) | الاضداد | 1, 2,3 | 3  2 the.  1tut | 22 |
| 1 – 4 of article (12) | 1-12 of  article (11) | الاشتقاق | 1, 2, 3 | 3  2 the.  1tut | 23 |
| 1 – 4 of article (12) | 1-12 of  article (11) |  | 2, 3 | 3  2 the.  1tut | 24 |
| 1 – 4 of article (12) | 1-12 of  article (11) | التعريف بالعدد | 2, 3 | 3  2 the.  1tut | 25 |
| 1 – 4 of article (12) | 1-12 of  article (11) | اقسام العدد | 2, 3 | 3  2 the.  1tut | 26 |
| 1 – 4 of article (12) | 1-12 of  article (11) | نشأة النحو عند العرب | 4 | 3  2 the.  1tut | 27 |
| 1 – 4 of article (12) | 1-12 of  article (11) | تطور النحو | 4 | 3  2 the.  1tut | 28 |
| 1 – 4 of article (12) | 1-12 of  article (11) | خلاصة عامة | 1,2,3,4,5 | 3  2 the.  1tut | 29 |
| 1 – 4 of article (12) | 1-12 of  article (11) |  |  | 3  2 the.  1tut | 30 |

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| ***15. Infrastructure*** | | |
| محاضرات بالاعتماد على المصادر الاتية   1. مصطفى التوني، الهمزة في اللغة العربية دراسة لغوية. 2. سليم سلامة الروسان، قواعد الكتباة والترقيم والخط. 3. سعد بن على بن محمد ، الفرق بين الضاد والظاء. 4. ابي زيد الانصاري، نووادر في اللغة العربية. 5. صلاح مهدي الفرطوسي، هاشم طه شلاش، المهذب في علم التصريف. 6. د.أ.نيكل، مختارات من الشعر الاندلسي. 7. التبريزي، شرح المتنبي. 8. شرح ابن عقيل، اقسام الجملة.   عبد السلام المسدي، الاسلوبية والاسلوب. | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| / | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| / | Community-based facilities  (include for example, guest  Lectures, internship, field studies) | |
| ***16. Admissions*** | | |
| / | | Pre-requisites |
| 25 | | Minimum number of students |
| 90 | | Maximum number of students |
| **Instructor:**  **Ass. Lecturer Hayder Zuhair Jasim**  College of Engineering/unit democracy and human rights and Arabic Language  <Tel:009647812432383>  Email: [zhery\_hader@yahoo.com](mailto:zhery_hader@yahoo.com) | | ***17. Course Instructors*** |