Republic of Iraq

Ministry of Higher Education & Scientific Research

Supervision and Scientific Evaluation Directorate

Quality Assurance and Academic Accreditation

International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2017-2018

Universitiy: Baghdad

College : Engineering

Number Of Departments In The College :

Date Of Form Completion : April – 25 / 2017

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Dean ’s Name

Date : / 4 / 2017

Signature

Dean ’s Assistant For Scientific Affairs

Date : / / 2017

Signature

The College Quality Assurance And University Performance Manager

Date : / / 2017

Signature

Quality Assurance And University Performance Manager

Date : / / 2017

Signature

**TEMPLATE FOR COURSE SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME 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 programmer specification. |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Survey Engineering Department (SED) | ***2. University Department/Centre*** |
| Numerical Analysis | ***3. Course title/code & Description*** |
| MATLAB | ***4. Programme(s) to which it Contributes*** |
| Computers, White board and PowerPoint | ***5. Modes of Attendance offered*** |
| Semester | ***6. Semester/Year*** |
| 30 hrs. / 2 hrs. per week | ***7. Number of hours tuition (total)*** |
| 5/6/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| This course will emphasize the development of numerical algorithms to provide solutions to common problems formulated in science and engineering. The primary objective of the course is to develop the basic understanding of the construction of numerical algorithms, and perhaps more importantly, the applicability and limits of their appropriate use. The emphasis of the course will be the thorough study of numerical algorithms to understand (i) the guaranteed accuracy that various methods provide, (2) the efficiency and scalability for large scale systems. and (3) issues of stability. Topics include the standard algorithms for numerical computation:. | |

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| ***10·*** ***Learning Outcomes*** |
| At the end of the class, the student will be able to use the numerical method to find the approximate solution of different engineering problems. |
| ***11.*** ***Teaching and Learning Methods*** |
| 1. Lectures.  2. Homework and Assignments.  3. Tests and Exams.  4. In-Class Questions and Discussions.  5. Extracurricular Activities. |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.  2. Student engagement during lectures.  3. Responses obtained from students, questionnaire about curriculum and faculty member ( Instructor ). |
| ***13. Grading Policy***  1. Quizzes:  - There will be a (2 – 3) closed books and notes quizzes during the academic year.  - The quizzes will count 20% of the total course grade.  2. Homework  -There will be a homework sheet submitted at each lecture.  - The homework will count 10% of the total course grade  3. Final Exam:  - The final exam will be comprehensive, closed books and  notes, and will take place on June 2015 from 9:00 AM - 12:00 PM  - 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 |
| 1-3 of article (12) | 1-5 of article (11) | Interpolation | 1 | 2 | 1 |
| 1-3 of article (12) | 1-5 of article (11) | Interpolation | 1 | 2 | 2 |
| 1-3 of article (12) | 1-5 of article (11) | Root Finding | 1 | 2 | 3 |
| 1-3 of article (12) | 1-5 of article (11) | Root Finding | 1 | 2 | 4 |
| 1-3 of article (12) | 1-5 of article (11) | Root Finding | 1 | 2 | 5 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of simultaneous equations | 2,3 | 2 | 6 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of simultaneous equations | 2,3 | 2 | 7 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of simultaneous equations | 2,3 | 2 | 8 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of ODE / first order | 2,3 | 2 | 9 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of ODE / first order | 2,3 | 2 | 10 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of ODE / first order | 2,3 | 2 | 11 |
|  |  | Solution of ODE /second order | 2,3 | 2 | 12 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of PDE by finite difference | 2,3 | 2 | 13 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of PDE by finite difference | 2,3 | 2 | 14 |
| 1-3 of article (12) | 1-5 of article (11) | Solution of PDE by finite difference | 2,3 | 2 | 15 |

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| ***15. Infrastructure*** | | |
| ***Core Texts:***  ***-***  ***References:***   * “Numerical Method for Science and Engineering” by R. W. Hamming, 1987. * “Basic Numerical Method” by R. E. Scraton, 1984. | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| / websites | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| / Lectures and internship | Community-based facilities  (include for example, guest  Lectures , internship , field studies) | |
| ***16. Admissions*** | | |
|  | | Pre-requisites |
| 10 | | Minimum number of students |
| 40 | | Maximum number of students |
| ***Instructors***  Assistant lecture (Zahraa A. Husain)  Lecturer of Surveying Engineering  Surveying. Engr. Dept.  College of Engineering  University of Baghdad  Tel: 07903689129  Email: zahraaazeldeen@yahoo.com | | ***17. Course Instructors*** |

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