**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 programme specification. |

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| College of EngineeringUniversity of Baghdad | ***1. Teaching Institution*** |
| Mechanical Engineering Department (MED) | ***2. University Department/Centre*** |
| **part 1/** \*Fortran 90 Language &Autocad program\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***part 2/** \*Logic &interface\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The course is taught through 5 hrs per week, 3 theories and 2 experimental. | ***3. Course title/code& Description*** |
| Mechanical Engineering ( ME ) | ***4. Programme(s) to which itContributes*** |
| Annual System ; There is only one modeof delivery, which is a “Day Program”.The students are full time students, and oncampus. They attend full day program inface-to-face mode. The academic year iscomposed of 30-week regular subjects. | ***5. Modes of Attendance offered*** |
| 1st&2nd / Academic Year 2017 – 2018 | ***6. Semester/Year*** |
| 150 hrs. / 5 hrs. per week | ***7. Number of hours tuition (total)*** |
| 12/10 / 2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** |
| \*Fortran is useful for a wide variety of application as below:* Fortran is a simple language
* Fortran has always existed
* Fortran compilers are generally available
* Earlier the first programming language
* Used commercially for technical and scientific computations
* Good at numerical analysis and technical calculations
* It is necessary to structure the problem in order to use Fortran
* A large number of programs and routines in Fortran are exchanged internationally
* Efficient compilers
* The first standardized programming language
* Better standard obedience than other languages
* Is continually developed (a new version each decade)
* The dominating language on supercomputers

\*Autocad AutoCAD software provides the design and the shape for the products that needs to be created- It provides flexible and user friendly features with the tools to design the applications and document the workflows--This involves aggregate and import models for the formats and usually allows the design to get created without any change in source model -It provides tools to provide the formats by detailed designing the layouts and drawings using the views automatically\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Logic &interface |

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| ***10·Learning Outcomes***\* Fortran is the dominant programming language used in scientific applications. It is therefore important for physics (or engineering) students to be able to read and modify Fortran code.\* autocad AutoCAD, used for drafting or engineering design, is a software application. CAD, which can stand for either Computer Aided Design or Computer Aided Drafting, can help engineers draw 3D or 2D drawings or models. |
| \*Logic &interface |
| ***11.Teaching and Learning Methods*** |
| 1. Lectures.2. Tutorials.3. Homework and Assignments.4. Tests and Exams.6. In-Class Questions and Discussions.7. Connection between Theory and Application..  |
| ***12. Assessment Methods***  1. Examinations, Tests, and Quizzes.2. Extracurricular Activities.3. Student Engagement during Lectures.4. Responses Obtained from Students, Questionnaire aboutCurriculum and Faculty Member ( Instructor ). |
| ***13. Grading Policy***1. Quizzes:- There will be a ( 15 – 20 ) 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 extramarks ( 1 – 5 % ) for the student, depending on the type of activity.4. Final Exam:- The final exam will count 60% of the total course grade |

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| ***14. Course Structure*** |
| AssessmentMethod | TeachingMethod | Unit/Module orTopic Title | LOs( Article10 ) | Hours | Week |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Fortran symbolsConstantsVariables  (E- Notation) \*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/  | a,b | 53 the.2 exp | 1 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/ Variables Arithmetic expressionLibrary function \*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/  | a,b | 53 the.2 exp. | 2 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Input statements Output StatementsEnd statements\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 3 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/ Control statementsUnconditional Go To statements Conditional Go To statement\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | a,b | 53 the.2 exp. | 4 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Conditional Go To statement\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | a,b | 53 the.2 exp. | 5 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Arithmeti (IF) statements\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | a,b | 53 the.2 exp. | 6 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/If - then statements If- then –else- structure Nested If structure\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 7 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Do loop statementsDo statement \*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 8 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Continue statementsNested Do loopsFactorial\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 9 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Dimension statementOne dimension \*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 10 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Dimension statementTwo dimension\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 11 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Library Functions Internal Function External Function \*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 12 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Subroutines\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 13 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Engineering and Scientific applicationsFinding roots of equationsItarative methodNewton Raphson method\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 14 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Engineering and Scientific applications  Numerical integrationTrapezoidal ruleSimpson rule\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | a,b | 53 the.2 exp. | 15 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/AutoCAD Standard ToolbarsObject Propertiesstatus bar\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | c | 53 the.2 exp. | 16 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/GridDrawZoom\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | c | 53 the.2 exp. | 17 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Object SnapCreate Drawingsmodify\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2/ | c | 53 the.2 exp. | 18 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Type of dimensionAbsolute& IncrementalTextHatch\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 19 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Application -1-\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 20 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Application -2-\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 21 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Three dimension( figures)SolidbodyShade\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 22 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Three dimension( figures)SolidbodyShade\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 23 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Operations \*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 24 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/ExtrudeThickness\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 25 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Sections\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 26 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/View ports\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 27 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Project -1-\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 | c | 53 the.2 exp. | 28 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Project -2-\*\*\*\*\*\*\*\*\*\*\*\*\*\* | c | 53 the.2 exp. | 29 |
| 1 – 4 of article (12) | 1 – 7 of article (12) | Part 1/Application -1-\*\*\*\*\*\*\*\*\*\*\*\*\*\*Part 2 |  | 53 the.2 exp. | 30 |

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| ***15. Infrastructure*** |
| 1- أ.د. عوض منصور & د. محمود اباظه ،" المرجع الاساس في برمجة وتطبيقات فورتران 90 " ، الطبعة الاولى ، 1994.2- "Fortran 90 Handbook" by Walter S. Brainerd, Jeanne C. Adams, Jeanne T.Martin, Brian T. Smith, and Jerrold L. Wagener 1992.3- Auto Cad 2002"" المؤسسة العامة للتعليم الفني والتدريب المهني.<http://www.boosla.com>  4-"AutoCAD2008 Tutorial: 3D Modeling" by Randy H. Shih (2008) | Required reading:· CORE TEXTS· COURSE MATERIALS· OTHER |
| - Application in laboratory- Available websites related to the subject.- Extracurricular activities | Special requirements (include forexample workshops, periodicals,IT software, websites) |
| * Field and scientific visits
* Extra lectures
 | Community-based facilities(include for example, guestLectures , internship,field studies) |
| ***16. Admissions*** |
| ME 101& ME 102 Courses | Pre-requisites |
| / | Minimum number of students |
| 70 | Maximum number of students |
| InstructorPart 1 :Dr. Sajida Lafta GhashimLecturer of Mechanical Engineering /Thermo- FluidMech. Eng. Dept.College of EngineeringUniversity of BaghdadEmail: Sajda\_lafta@yahoo.com Sajida.lafta@gmail.com Part 2 :  | ***17. Course Instructors*** |

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