**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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| Engineering College | ***1. Teaching Institution*** |
| University of Baghdad / department of Surveying | ***2. University Department/Centre*** |
| Matrices | ***3. Course title/code& Description*** |
| Matlab v2012 | ***4. Programme(s) to which it Contributes*** |
| White board and PowerPoint | ***5. Modes of Attendance offered*** |
| Semester | ***6. Semester/Year*** |
| 30 | ***7. Number of hours tuition (total)*** |
| 1/9/2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course*** | |
| The course aims to prepare students to be familiar with the details needed in the subsequent stages in many applications in the specialty classes and so it be as sports, in addition to solving many engineering problems. | |

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| ***10·Learning Outcomes*** |
| The student should deliver a complete knowledge and practical experience of applying matrix solution to solve problem. |
| ***11.Teaching and Learning Methods*** |
| 1. Lectures.  2. Tutorials.  3. Homework and Assignments.  4. Tests and Exams.  5. In-Class Questions and Discussions.  6. Connection between Theory and Application. |
| ***12. Assessment Methods***  Reports , exams, and logical thinking to solve problems |
| ***13. Grading Policy***  Semester grades from exam, reports, etc+ grade from the final exam. |

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| ***14. Course Structure*** | | | | | |
|  |  |  |  |  | Week |
| Introduction, definitions, Matrices, Equal Matrices. | | | | | 1 |
| Production of Matrices, some types of matrices. | | | | | 2 |
| Determinant of matrices, determined of orders (2\*2) and (3\*3). | | | | | 3 |
| Minors and Cofactors, determinant of matrix by Chio’s method. | | | | | 4 |
| The Inverse of a matrix, Inverse from the adjoint . | | | | | 5 |
| Inverse of matrix by partitioning, solved problems. | | | | | 6 |
| Inverse of matrix by Reduction, solved problems | | | | | 7 |
| Solution of simultaneous linear Equations by matrices: Cramer’s method, Inverse method. | | | | | 8 |
| Solution of simultaneous linear Equations by matrices: Gauss elimination, and Cholesky method. | | | | | 9 |
| Characteristic Values and Characteristic vectors: Eigen values and Eigen vectors. | | | | | 10 |
| Eigen values and Eigen vectors by long deviation. | | | | | 11 |
| Conic sections by matrices. | | | | | 12 |
| Applications of conic sections by matrices | | | | | 13 |
| Orthogonal matrix, Idempotent matrix, Caily Hamilton method | | | | | 14 |
| Examination | | | | | 15 |

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| ***15. Infrastructure*** | | |
| * Frank Ayres, J.R. (1962) “Matrices” Schaum’s outline series in Mathematics, Mc Graw Hall Book Company * E. H. Connell (2004) “Elements of Abstract and linear Algebra” University of Miami, USA | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| Webdite | Special requirements (include forexample 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 |
|  | | ***17. Course Instructors*** |

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