**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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| University of Baghdad | 1. Teaching Institution |
| College of Engineering / Energy Engineering | 2. University Department/Centre |
| Power Plant | 3. Course title/code |
| BSc. | 4. Programme(s) to which it contributes |
| weekly | 5. Modes of Attendance offered |
| year | 6. Semester/Year |
| 90 hour | 7. Number of hours tuition (total) |
| 15/05/ 2016 | 8. Date of production/revision of this specification |
| 9. Aims of the Course | |
| 1- Cognitive development of students by identifying the types of power plants | |
| 2- Skills development for students to learn how to deal with the types of fuel | |
| 3- Identify the basic constituent parts of plants | |
| 5- The development level of the student in how to deal with the properties of the fuel and its transformation from one state to another during use at stations | |
| 6- Identify the pros and cons cycles operator stations and how to develop | |

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| 10· Learning Outcomes, Teaching ,Learning and Assessment Methods |
| 1. Knowledge and Understanding   A1. The student recognizes the types of power plants.  A2 The student learns how to handle the types of fuel used  A3. That recognizes the student on how to deal with the tables and the properties of the fuel.  A5.  A6. |
| B. Subject-specific skills  B1. Resolve fundamental issues  B2.The use of the approach to the development of the student's mind in how to deal with the practical stations |
| Teaching and Learning Methods |
| The method of lecturing  way discussion and duties weekly |
| Assessment methods |
| A daily and monthly tests and tests the practical and theoretical |
| C. Thinking Skills  C1.Inference.  C2. Solve the problems.  C3.Learn thebasic commandsof the program.  C4. |
| Teaching and Learning Methods |
| The lecture/discussion/solve AppliedEngineering problems/learninglaboratory. |
| Assessment methods |
| Daily and monthly tests, alsothe practical and theoretical tests. |

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| D. Giving students the skill and knowledge about the types of process plants.  D2. Solving engineering problems in a manner theory by students  D3.  D4. |

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| 11. Course Structure | | | | | |
| Assessment Method | Teaching  Method | Unit/Module or Topic Title | ILOs | Hours | Week |
| A theory tests | The lectureand discussion | The concept of power plants | The student on the principles of the stations recognize | 3 HOUR | 1 |
| A theory tests | The lectureand discussion | Classification of power plants | The students recognize the types of stations | 3 HOUR | 2 |
| A theory tests | The lectureand discussion | Energy. Types of energy | The student recognizes the energy and types | 3 HOUR | 3 |
| A theory tests | The lectureand discussion | The first law of thermodynamics of open and closed system | The student learns the laws of thermodynamics | 3 HOUR | 4 |
| A theory tests | The lectureand discussion | Fuel properties of materials | The student learns on the properties of materials used in fuel stations and how to use the tables | 3 HOUR | 5 |
| A theory tests | The lectureand discussion | Classification of power plants cycles | The student recognizes the kinds of special courses plants ability | 3 HOUR | 6 |
| A theory tests | The lectureand discussion | Thermal carnot cycle | The student learns how to work Carnot cycle | 3 HOUR | 7 |
| A theory tests | The lectureand discussion | Rankin ideal thermal cycle | The student learns how to work on the Rankine cycle | 3 HOUR | 8 |
| A theory tests | The lectureand discussion | Rankin cycle with superheated | The student learns how to work with Rankin cycle superheated | 3 HOUR | 9 |
| A theory tests | The lectureand discussion | Rankine cycle with reheat. Pros and Cons | That recognizes the student how to work Rankine cycle with reheat. Advantages and disadvantages | 3 Hours | 10 |
| A theory tests | The lectureand discussion | Rankine cycle with regeneration or feed water heater | The learns how to work Rankin cycle of regeneration or feed water heater | 3 Hours | 11 |
| A theory tests | The lectureand discussion | Open and closed feed water heater | The student recognizes the kinds of feeding | 3 Hours | 12 |
| A theory tests | The lectureand discussion | Bryton,Otto thermal cycles | The student recognizes the remaining types of cycles | 3 Hours | 13 |
| A theory tests | The lectureand discussion | Stirling thermal Cycles | The student recognizes the remaining types of cycles | 3 Hours | 14 |
| A theory tests | The lectureand discussion | Steam generator(Boiler) | The student learns how to work on the steam generator (boiler) | 3 Hours | 15 |
| A theory tests | The lectureand discussion | Types of Steam Generator(Boilers) | The student recognizes the types of steam generators used in power plants | 3 Hours | 16 |
| A theory tests | The lectureand discussion | Steam turbine | The student recognizes the steam turbine and the nature of his work | 3 Hours | 17 |
| A theory tests | The lectureand discussion | Steam condenser | The student recognizes the steam condenser and the nature of his work | 2 Hours | 18 |
| Atheoretical and practicaltests | The lectureand discussion | iidentify thespecificcommands | Inputspecial ordersof Scriptfiles | 2 Hours | 19 |
| Atheoretical and practicaltests | The lectureand discussion | Identify thespecificcommands | Output methods andspecial ordersof Scriptfile | 2 Hours | 20 |
| Atheoretical and practicaltests | The lectureand discussion | Plot methods andspecial orders | two-dimensional plot | 2 Hours | 21 |
| Atheoretical and practicaltests | The lectureand discussion | plotmethods ofmultiplecurvesonthe same figure | Plot of multiplecurvesonthe same figure | 2 Hours | 22 |
| Atheoretical and practicaltests | The lectureand discussion | Plot Methods of multiplecurveson the samewindow | Plot ofdifferentcurveson the samewindow | 2 Hours | 23 |
| Atheoretical and practicaltests | The lectureand discussion | How to drawpolarcurves andordersits own | Dealingwithpolarcurves | 2 Hours | 24 |
| Atheoretical and practicaltests | The lectureand discussion | methodsandordersof three-dimensional plot | The basics ofthree-dimensional plot | 2 Hours | 25 |
| Atheoretical and practicaltests | The lectureand discussion | How tohandle Polynomialfunctionsandordersits own | Polynomialfunctions | 2 Hours | 26 |
| Atheoretical and practicaltests | The lectureand discussion | operation of Addition, subtraction, multiplication and division | Mathematical operationsofpolynomialfunctions | 2 Hours | 27 |
| Atheoretical and practicaltests | The lectureand discussion | How to build aprogramin a MATLAB language | Programming inMATLAB | 2 Hours | 28 |
| Atheoretical and practicaltests | The lectureand discussion | identify of program structure | iteration methods | 2 Hours | 29 |
| Atheoretical and practicaltests | The lectureand discussion | Identify the types of in MATLAB | conditional statements in MATLAB | 2 Hours | 30 |

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| 12. Infrastructure | |
| Power plant technology By M.M.El-Wakil  .  In addition, others references from an internet. | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER |
|  | include, for example, to solve the basic issues and conduct research on the types of plants and their parts |
|  | Community-based facilities  (include for example, guest  Lectures , internship , field studies) |

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| 13. Admissions | |
|  | Pre-requisites |
| 10 | Minimum number of students |
| 30 | Maximum number of students |