**TEMPLATE FOR COURSE SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

**COURSE SPECIFICATION**

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| This course forms with the course of internal combustion engines the power engineering course, so 50% of the grade is regarded for power plant course. |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Department of Mechanical Engineering (DME) | ***2. University Department/Centre*** |
| **Power Engineering /ME 404**  **A/ Power Plants** | ***3. Course title/code & Description*** |
| Mechanical Engineering ( ME ) | ***4. Programme(s) to which it Contributes*** |
| Annual | ***5. Modes of Attendance offered*** |
| 2016-2017 | ***6. Semester/Year*** |
| 60 | ***7. Number of hours tuition (total)*** |
| 30-10-2017 | ***8. Date of production/revision of this specification*** |
| ***9. Aims of the Course :*** | |
| 1. **Thermal design and analysis of different parts of electrical power generation systems** | |

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| ***10·*** ***Learning Outcomes*** |
| At the end of the class, the student will be able to:   1. Work in any power plant 2. Analyze and give assessment of different parts of the power plant, since he got the principles of steam, gas, hydraulic and solar power plants. |
| ***11.*** ***Teaching and Learning Methods*** |
| 1. Lectures 2. Quizzes + term tests, and final exam 3. Project |
| ***12. Assessment Methods*** |
| 1. laboratory 2. cite visits   ***13. Grading Policy***  Term tests and quizzes (15%)  Final exam (35%) |

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| ***14. Course Structure*** | | | | | |
| Assessment Method | Teaching  Method | Unit/Module or Topic Title | LOs  ( Article 10 ) | Hours | Week |
|  |  | **Introductory concepts**  **Fluid flow and thermodynamics** |  | 2 | 1 |
|  |  | **Introductory concepts**  **Heat transfer** |  | 2 | 2 |
|  |  | **All types of Steam cycles** |  | 2 | 3 |
|  |  | = |  | 2 | 4 |
|  |  | = |  | 2 | 5 |
|  |  | = |  | 2 | 6 |
|  |  | **=** |  | 2 | 7 |
|  |  | **Binary cycle** |  | 2 | 8 |
|  |  | **=** |  | 2 | 9 |
|  |  | **Gas cycles** |  | 2 | 10 |
|  |  | = |  | 2 | 11 |
|  |  | **=** |  | 2 | 12 |
|  |  | **=** |  | 2 | 13 |
|  |  | **combined cycles** |  | 2 | 14 |
|  |  | **Gas turbine** |  | 2 | 15 |
|  |  | **=** |  | 2 | 16 |
|  |  | **Steam turbine** |  | 2 | 17 |
|  |  | **=** |  | 2 | 18 |
|  |  | **Steam generators** |  | 2 | 19 |
|  |  | **=** |  | 2 | 20 |
|  |  | = |  | 2 | 21 |
|  |  | **=** |  | 2 | 22 |
|  |  | **Heat exchangers condensers + feed water heaters + air heaters** |  | 2 | 23 |
|  |  | = |  | 2 | 24 |
|  |  | = |  | 2 | 25 |
|  |  | = |  | 2 | 26 |
|  |  | **Hydraulic power plant** |  | 2 | 27 |
|  |  | = |  | 2 | 28 |
|  |  | = |  | 2 | 29 |
|  |  | **Solar power plant** |  | 2 | 30 |
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| ***15. Infrastructure*** | | |
| ***Textbook***  . **Power Plant Theory And Design**  **by J. Potter**  (pub. John Wily 1956)   * ***References***   **1. Power Plant system Design**  **By W.Li Kam & A.P. Priddy**  ***Others***   1. Heat transfer 2. Thermodynamics 3. Fluid Mechanics | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | |
| * .websites | Special requirements (include for example workshops, periodicals, IT software, websites) | |
| * . field studies | Community-based facilities  (include for example, guest  Lectures , internship , field studies) | |
| ***16. Admissions*** | | |
|  | | Pre-requisites |
| 10 | | Minimum number of students |
| 60 | | Maximum number of students |
| ***Instructor:***    **Prof. Dr. Karima Esmail Amori**  ***Teaching Assistant:***  none | | ***17. Course Instructors*** |

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