**TEMPLATE FOR COURSE SPECIFICATION**

|  |
| --- |
| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

 **COURSE SPECIFICATION**

|  |
| --- |
| 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. |

|  |  |
| --- | --- |
| 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**
 |

|  |
| --- |
| ***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%) |

|  |
| --- |
| ***14. Course Structure*** |
| Assessment Method | TeachingMethod | 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 |
|  |  |  |  |  |  |

|  |
| --- |
| ***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, guestLectures , 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*** |

.