**TEMPLATE FOR COURSE SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

 **COURSE SPECIFICATION**

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| The course introduce and analysis the needs of factory methods for planning scheduling optimization and control so as to optimize the need for different requirements |

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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Mechanical Engineering Department (MED) | ***2. University Department/Centre*** |
|  Industrial Engineering/ ME 409 | ***3. Course title/code & Description*** |
| Mechanical Engineering ( ME ): Industrial Engineering, Operation Research, Quality control  | ***4. Programme(s) to which it Contributes*** |
| / | ***5. Modes of Attendance offered*** |
| Year | ***6. Semester/Year*** |
| 30 hrs | ***7. Number of hours tuition (total)*** |
| Annualy | ***8. Date of production/revision of this specification***  |
| ***9. Aims of the Course*** |
| 1. The ability to improve operations by solving complex engineering problems.
2. Demonstrate professional leadership.
3. Motivation and the ability to achieve lifelong learning career.
4. Performance of tasks advanced in the industry, and the ability to successfully planning, control, and implementation of large-scale projects.
5. Understand and apply the principles of science, technology, engineering and mathematics, which include industry-related problems.
6. Contribute to the profitable growth of the industrial sectors using analytical tools, effective computational approach, methodology and systems thinking.
7. Maintaining high standards of professional and ethical responsibility.
8. Work effectively, diverse and multicultural emphasis on the application of skills, teamwork and communication. Practice and lifelong learning to maintain the technical operation and excellence in various fields. Promotion of the profession and its benefits to the community.
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| ***10·*** ***Learning Outcomes***  |
| At the end of the class, the student will be able to:1. Demonstrate the knowledge, techniques, skills and modern tools in the industrial safety systems, work stations and layouts.
2. Demonstrate the ability to apply modern knowledge and to apply mathematics, science, engineering and technology.
3. Design and conduct experiments, as well as analyze, interpret data and apply the experimental results for the services or manufacturing process improvement.
4. Demonstrate the ability to apply creativity in the design of a work system, safety, or industrial process.
5. Demonstrate the ability to work in groups.
6. Demonstrate the ability to identify, analyze and solve technical problems in different processes including management and economy principles using mathematics and statistics.
7. Be able to communicate effectively especially in technical topics such as safety systems, workstations, work measurement, accounting, facilities planning, quality control, industrial economy, and the use of modern techniques and graphics standards.
8. Be able to recognize the need for and an ability to engage in lifelong learning.
9. Understand professional, social and ethical responsibilities.
10. Demonstrate respect for diversity, social and global issues.
11. Demonstrate commitment with the quality, punctuality, and continuous improvement
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|  ***11.*** ***Teaching and Learning Methods*** |
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|  **Annual****√** | **Semester System** | **Academic System** |
| **Final Examination** | **Laboratory Work** | **Quest** | **Course Assessment for Annual System****(100%)** |
| **70%** | **\** | **30 % ( Homework and Quizzes)** |
| **Industrial engineering material (theoretical) without laboratory \ (2) hours + quality control \ (1) hour**  | **Additional Information** |

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|  ***12. Assessment Methods***  |
| 1. Reinforcement is done through homework, quizzes, and student engagement during lectures
2. Lists the objective course learning outcomes by number based on Table with space shown to record the class averages on each learning outcome for each exam and the standard deviation for each learning outcome. This is an objective measure of the student/class mastery of the learning objective.
3. Lists the responses obtained from student survey conducted at the end of academic year as well as the instructor evaluation of each outcome.

***13. Grading Policy***1. Quizzes:- There will be a 13 closed books and notes quizzes during the academic year.- The quizzes will count 30% of the total course grade.2. Final Exam:- The final exam will be comprehensive, closed books and notes, and will take place on (-day--), (--month--), 201 from 9:00 AM - 12:00 PM in room XXXXX.- The final exam will count70% of the total course grade |

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| ***14. Course Structure*** |
| Assessment Method | TeachingMethod | Unit/Module or Topic Title | LOs( Article 10 ) | Hours | Week |
|  |  | General concepts in industrial engineering |  |  | 1 |
|  |  | Site and arrange industrial unit |  |  | 2 |
|  |  | Study the economic and technical feasibility |  |  | 3 |
|  |  | Study the economic and technical feasibility |  |  | 4 |
|  |  | Exam |  |  | 5 |
|  |  | Depreciation, Forecasting |  |  | 6 |
|  |  | Exam |  |  | 7 |
|  |  | Breakeven Point |  |  | 8 |
|  |  | Breakeven Point |  |  | 9 |
|  |  | Add a new Design |  |  | 10 |
|  |  | Exam |  |  | 11 |
|  |  | Networks Analysis |  |  | 12 |
|  |  | Exam |  |  | 13 |
|  |  | Linear Programming |  |  | 14 |
|  |  | Linear Programming |  |  | 15 |
|  |  | Linear Programming |  |  | 16 |
|  |  | Exam |  |  | 17 |
|  |  | Transport Problems |  |  | 18 |
|  |  | Assignment Problems |  |  | 19 |
|  |  | Exam |  |  | 20 |
|  |  | Maintenance and Replacement |  |  | 21 |
|  |  | Maintenance and Replacement |  |  | 22 |
|  |  | Exam |  |  | 23 |
|  |  | Time Study & Work Study  |  |  | 24 |
|  |  | Exam |  |  | 25 |
|  |  | inventory |  |  | 26 |
|  |  | Exam |  |  | 27 |
|  |  | Quality Control |  |  | 28 |
|  |  | Quality Control |  |  | 29 |
|  |  | Exam |  |  | 30 |

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| ***15. Infrastructure*** |
| * ***Textbook*** "Fundamental of Industrial Engineering", Mr. Tawfok Al-Medlal Baghdad University 1980
* ***References***
1. "Introduction to Engineering Managements", Dr. Aysser Sousan, Technology Institute 1980.
2. "Operations Research Engineering Management" / Arabic version, Dr.Mazen B. Adel,1987
3. "Operations Management" / Arabic version,Scot S., 2006.

***Others***1. nill
 | Required reading:· CORE TEXTS· COURSE MATERIALS· OTHER |
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 | Special requirements (include for example workshops, periodicals, IT software, websites) |
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 | Community-based facilities(include for example, guestLectures , internship , field studies) |
| ***16. Admissions*** |
| Statistics, Operation research, Quality Control  | Pre-requisites |
| 40 | Minimum number of students |
| 45 | Maximum number of students |
| ***Instructor: Iman Qasim Abduahussein*** ***Teaching Assistant: nill*** | ***17. Course Instructors*** |

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