**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 may 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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| College of Engineering  University of Baghdad | ***1. Teaching Institution*** |
| Mechanical Engineering Department (MED) | ***2. University Department/Centre*** |
| Manufacturing processes 2 ( third year)  | ***3. Course title/code & Description*** |
| Mechanical Engineering ( ME ) | ***4. Programme(s) to which it Contributes*** |
| Anual system | ***5. Modes of Attendance offered*** |
| year | ***6. Semester/Year*** |
| 4 hour in week ( 2 hour theoretical and 2 hour work shop) for each class  | ***7. Number of hours tuition (total)*** |
| October 2017 | ***8. Date of production/revision of this specification***  |
| ***9. Aims of the Course*** |
| To give basic fundamental knowledge to the student in the subject of manufacturing process and application in engineering industry . As well as practical training on some manufacturing processes such as mechanical operations |

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| ***10·*** ***Learning Outcomes***  |
| Enable the student to Understand how to use the knowledge of this course which may be needed, to improving his ability in problems concerning applying basic mathematical and scientific concepts for the description and solution of engineering problems,developing initial proficiency in mechanical engineering disciplines,developing the ability to conduct experiments, and critically analyze and interpretdata,performing mechanical engineering integrated design of systems, components, orprocesses by means of practical experiences (group projects),identify, formulate, and solve mechanical engineering problems using modernengineering tools, techniques, and skills,collaborating in group projects,developing their written and oral communication skills through presentations ofproject results,acquiring an appreciation for some of the ethical problems that arise in the exercise of the profession, |
|  ***11.*** ***Teaching and Learning Methods*** |
| 1. Lectures.2. work shop.3. Homework and Assignments.4. Tests and Exams.5. In-Class Questions and Discussions.6. Connection between Theory and Application.7. Reports, Presentations, and Posters |
|  ***12. Assessment Methods***  |
| Home workClass activityexamOut of class activitiesPractice and exam in workshop ***13. Grading Policy***1. Quizzes: - There will be a six closed books and notes quizzes during the academic semester. The quizzes will count 8% of the total course grade.  2. Exams: - There will be one closed books and notes exam during the academic year, The mid-term exam will count 4% of the total course grade.3- Workshop training  - There will be count 20 % of the total course grade. 4. Final Exam:  - The final exam will be comprehensive, closed books and notes, The final exam will count 40% 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 |
|  | Theoretical + engineering applications | Fundamentals of metal casting |  | 2 | 1 |
|  | Theoretical + engineering applications | Casting processes, solidification of metals, shrinkage |  | 2 | 2 |
|  | Theoretical + engineering applications | permanent mold casting, foundry practice, casting quality, metals for casting, product design consideration |  | 2 | 3 |
|  | Theoretical + engineering applications | permanent mold casting, foundry practice, casting quality, metals for casting, product design consideration |  | 2 | 4 |
|  | Theoretical + engineering applications | Exam +Video presentations on the subject |  | 2 | 5 |
|  | Theoretical + engineering applications | Theory of metal machiningOverview of machining technology |  | 2 | 6 |
|  | Theoretical + engineering applications | theory chip formation in metal machining ,force relationships and the merchant equation |  | 2 | 7 |
|  | Theoretical + engineering applications | power and energy relationships in machining , cutting tempature |  | 2 | 8 |
|  | Theoretical + engineering applications | Machining operationMachining and part geometry, turning and related operation,  |  | 2 | 9 |
|  | Theoretical + engineering applications | drilling and related operation |  | 2 | 10 |
|  | Theoretical + engineering applications | milling |  | 2 | 11 |
|  | Theoretical + engineering applications | Nontraditional machining  |  | 2 | 12 |
|  | Theoretical + engineering applications | Exam +Video presentations on the subject |  | 2 | 13 |
|  | Theoretical + engineering applications | Fundamentals of weldingOverview of welding technology |  | 2 | 14 |
|  | Theoretical + engineering applications | The weld joint, physics of welding |  | 2 | 15 |
|  | Theoretical + engineering applications | Exam +Video presentations on the subject |  | 2 | 16 |
|  | Theoretical + engineering applications | Fundamentals of metal formingOverview of metal forming, material behavior in metal forming |  | 2 | 17 |
|  | Theoretical + engineering applications | temperature in metal forming, strain rate sensitivity, friction and lubrication |  | 2 | 18 |
|  | Theoretical + engineering applications | Bulk deformation process in metal workingRolling, forging |  | 2 | 19 |
|  | Theoretical + engineering applications | extrusion, wire and bar drawing |  | 2 | 20 |
|  | Theoretical + engineering applications | Exam +Video presentations on the subject |  | 2 | 21 |
|  | Theoretical + engineering applications | Sheet metal workingCutting operation, bending operation |  | 2 | 22 |
|  | Theoretical + engineering applications | Drawing |  | 2 | 23 |
|  | Theoretical + engineering applications | Exam +Video presentations on the subject |  | 2 | 24 |
|  | Theoretical + engineering applications | Powder metallurgy |  | 2 | 25 |
|  | Theoretical + engineering applications | Powder metallurgy |  | 2 | 26 |
|  | Theoretical + engineering applications | Plastics processesExtrusion, production of sheet and film |  | 2 | 27 |
|  | Theoretical + engineering applications | Fiber and filament production(spinning),coating processes, injection molding, blow molding |  | 2 | 28 |
|  | Theoretical + engineering applications | Exam +Video presentations on the subject |  | 2 | 29 |
|  | Theoretical + engineering applications | Review and general questions and clarifications on Article |  | 2 | 30 |

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| ***15. Infrastructure*** |
| ***Textbook*** . Mikell. P. Grover," **Fundamentals of Modern Manufacturing**", fourth edition ,John wiley&sons ,2010.*
* ***References***
1. Serope Kalpakjian, and Stepen Schmid,"Manufacturing Engineering Technology",2009
2. .

***Others*** | 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*** |
|  | Pre-requisites |
| 15 | Minimum number of students |
| 38 | Maximum number of students |
| ***Instructor:*** ***Assistant Professor*** ***Dr. Ahmed Abdulrasool Ahmed Al -Khafaji******Teaching Assistant:***  | ***17. Course Instructors*** |

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