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| المملكة العربية السعودية  وزارة التعليم العالي  **جامعة أم القرى**  الكلية الجامعية بالجموم – قسم الحاسب الآلي |  | Kingdom of Saudi Arabia  Ministry of Higher Education  **Umm Al-Qura University**  University College in Al-Jamoum  Computer Dept. |

Course Specification

1. **Course number and name:** (2316519-4) Graduation Project I
2. **Credits and contact hours:** 4 Credits

(Lecture: 4/week – Practical Session: Non)

1. **Instructor’s or course coordinator’s name:** Dr. Majid Al-Maraashi
2. **Text books**
3. **Main Text book:** Ian Sommerville, Software Engineering, 9th Edition, Addison-Wesley, 2011.
4. **Reference:** M. Shooman, Software Engineering, Mcgraw-Hall, 2001.
5. **Specific course information**
6. **brief description of the content of the course (Catalog Description):**

The graduation project aims to let students develop projects that demonstrate their intellectual, technical and creative abilities. Students develop the projects under the direction and supervision of faculty members. Moreover, students gain lifelong learning skills and interface to real life applications. The main practical skills are related to software development processes. Specifically, students should practice in project management, system analysis and design, and software development documentation and presentation.

1. **prerequisites or co-requisites:** Operating Systems (2316411-3),

Advanced Databases (2316435-3)

1. **indicate whether a required, elective, or selected elective course in the program:** required
2. **Specific goals for the course**

The student will be able to:

1. Apply knowledge of computing and mathematics appropriate to the discipline.
2. Analyze a problem, and identify and define the computing requirements appropriate to its solution.
3. Function effectively on teams to accomplish a common goal;
4. Communicate effectively with a range of audiences.
5. Recognize the need for, and engage in, continuing professional development.
6. Use current techniques, skills, and tools necessary for computing practices.
7. Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
8. Apply design and development principles in the construction of software systems of varying complexity.

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| *Course*  *Goals* | *Program Outcomes* | | | | | | | | | | |
| SOa | SOb | SOc | SOd | SOe | SOf | SOg | SOh | SOi | SOj | SOk |
| 1 | ✓ |  |  |  |  |  |  |  |  |  |  |
| 2 |  | ✓ |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  | ✓ |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  | ✓ |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  | ✓ |  |  |  |
| 6 |  |  |  |  |  |  |  |  | ✓ |  |  |
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| **Relationship of Course Goals to the Program Student Outcomes** | |
| **SOa** | An ability to apply knowledge of computing and mathematics appropriate to the discipline   * *Students apply knowledge of computing and design to a project.* |
| **SOb** | An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.   * *Students will develop project requirement specification.* |
| **SOd** | An ability to function effectively on teams to accomplish a common goal.   * *Projects are implemented in teams.* |
| **SOf** | An ability to communicate effectively with a range of audiences.   * *The projects require communications, specifications, progress reports, and final report.* |
| **SOh** | Recognition of the need for, and an ability to engage in, continuing professional development.   * *The students often must utilize the internet to learn and apply the new technologies that they have chosen in support of their projects.* |
| **SOi** | An ability to use current techniques, skills, and tools necessary for computing practices.   * *Projects use current computing and modeling/design tools.* |
| **SOj** | An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.   * *Students are required to apply their knowledge of computing to design a solution to a problem and to document the solution including the tradeoffs involved in their design choices.* |
| **SOk** | An ability to apply design and development principles in the construction of software systems of varying complexity.   * *The students are required to use standard design and development principles on a significant software project.* |

1. **Brief list of topics to be covered**

* Project Initialization
* Survey and research component
* System software analysis
* Software design
* Software develop documentation
* Project presentation