### ATTACHMENT 5.

**Kingdom of Saudi Arabia**

**The National Commission for Academic Accreditation & Assessment**

**Course Specifications**

**(CS)**

**Operating System**

**(COMP 2303)**

**Course Specifications**

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| Institution**: King Saud University** Date: **06/06/2017** |
| College/Department  **Community College / Computer Science** |

A. Course Identification and General Information

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| 1. Course title and code: **Operating Systems / COMP 2303** |
| 2. Credit hours: **3 Hours (2 Lectures + 2 Lab)** |
| 3. Program(s) in which the course is offered: **Computer Science Program** |
| 4. Name of faculty member responsible for the course: Dr.Mohammed Al-Maitah |
| 5. Level/year at which this course is offered: **Level 2** |
| 6. Pre-requisites for this course (if any): **ENGL 1103** |
| 7. Co-requisites for this course (if any): **None** |
| 8. Location if not on main campus: **Community College** |
| 9. Mode of Instruction (mark all that apply)  70%  X  a. traditional classroom What percentage?  30%  X  b. blended (traditional and online) What percentage?  c. e-learning What percentage?  d. correspondence What percentage?  f. other What percentage?  Comments: |

B Objectives

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| 1. What is the main purpose for this course?   * **To expand essential student knowledge in the different type of operating systems and their necessity, while providing a theoretical bases to the operating system interfaces, operating system architecture, process concept CPU scheduling and memory management.** * **The student should achieve the technical skills to work on a Linux and windows operating system, as well as knowing the Genome desktop, desktop sessions, using the panels, using the main menu bar, working with files and desktop configurations.** |
| 2. Briefly describe any plans for developing and improving the course that are being   * **Constantly encourage the student to improve their ability to search the Internet for solutions to be implemented in the classroom afterword, and compare different provided solutions by the students.** * **Have a first-hand experience in assembling computer hardware and installing the operating system.** * **Develop a dynamic homework based on the weak point of each student. This is done through the KSU Blackboard also in lab sessions.** |

C. Course Description

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| Course Description:  This course is an introduction to the core concepts behind modern computer operating systems. That will include what an operating system does or doesn’t do, computer and operating system structures, process and thread management, process synchronization and communications, memory management, file system, I/O subsystem and device management. Additionally, this course has a lab session to give the students more exposure to different modern operating systems and how to properly set up and install them in a new computer. The course consists of assigned reading, weekly lectures, group sessions, lab sessions, midterm and final exam, and a sequence of assignment for both theoretical and technical.  **The course provides the theoretical knowledge of operating system. It also includes the practical skills to work within Linux and Windows operating systems.** |

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| 1. Topics to be Covered | | |
| List of Topics | No. of  Weeks | Contact hours |
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| What is operating system and types of operating systems | 1 | 4 |
| Operating system services  Operating system interfaces  Operating system architecture | 2 | 8 |
| **Computer hardware and different operating system** | 1 | 4 |
| Process management  CPU scheduling | 2 | 8 |
| **Major Exam-1 Memory management**  **File management** | 2 | 8 |
|  | | |
| **Installing an OS and configuring desktop** | 1 | 4 |
| Command line and Root | 1 | 4 |
| Genome desktop | 1 | 4 |
| Desktop Sessions | 1 | 4 |
| Using panels Major Exam-1 | 1 | 4 |
| Working with files | 1 | 4 |
| Tools and Utilities | 1 | 4 |
| Final Exam |  |  |

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| 2. Course components (total contact hours and credits per semester): | | | | | | |
|  | Lecture | Tutorial | Laboratory  or Studio | Practical | Other: | Total |
| Contact  Hours | 30 |  |  | 30 |  | 60 |
| Credit | 2 |  |  | 1 |  | 3 |

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| 3. Additional private study/learning hours expected for students per week.  5   * **Reading carefully the topics in the textbook or reference book,** * **Browsing the websites that concerned with the course,** * **Discussing the course topics with the instructor in his office hours,** * **Watching the video lectures of other instructors who presented related topics worldwide.** |

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| 4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy |

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| **Code**  **#** | **NQF Learning Domains**  **And Course Learning Outcomes** | **Course Teaching**  **Strategies** | **Course Assessment**  **Methods** |
| **1.0** | **Knowledge** | | |
| 1.1 | **List all components of the Operating System.** | **Lecture, Tutorial, Lab & blended learning** | **- Quiz's**  **- Implementation of some case studies.  - Students activities in the class.  - Homework's** |
| 1.2 | **Describe operating system design and its impact on application system design and performance.** |
| 1.3 | **Recognize operating system features** |
| **2.0** | **Cognitive Skills** | | |
| 2.1 | **Analyze different types of operating system services, operating system interfaces, operating system architecture, CPU scheduling, Memory management and file system** | **Lecture, Tutorial, Lab & blended learning** | **- Student participation during the semester. - Exams and quizzes.** |
| 2.2 | **Explore the different type of OS** |
| 2.3 | **Use Operating system process concept including the CPU scheduling, memory management, files system** |
| 2.4 | **Apply OS concepts using Linux operating system.** |
| 2.5 | **Analyze operating Genome desktop, sessions, panels, tools and utility, and configuration.** |
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| **3.0** | **Interpersonal Skills & Responsibility** | | |
| 3.1 | **Apply Effective managerial, supervisory, and interpersonal skills.** | * **Task assignment** * **Group discussions** * **Practical exams** * **Case studies** * **Presentations and examples** | * **Viva voce** * **Review of their assignments** * **Response in the classroom** |
| 3.2 | **Work under pressure and produce quality results.** |
| **4.0** | **Communication, Information Technology, Numerical** | | |
| 4.1 | **Use effective oral and written communication skills.** | * **Debate on the latest technologies** * **Gather information about the new technological developments** * **Group activities** * **Exposure to Internet** | * **Formation of groups** * **Debate on a given topic** * **Assignments** * **Presentations** * **Question (quizzes) and answer sessions** * **Visit to computer hardware market and prepare report on the latest systems available in the market** |
| 4.2 | **Work effectively in a team environment** |
| 4.3 | **Using E-mail, search the internet, effective communication with classmates and lecturer** |
| **5.0** | **Psychomotor** | | |
| 5.1 | **N/A** |  |  |

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| 5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.) | | | | | | | |
| **Course**  **LOs #** | **Program Learning Outcomes**  **(Use Program LO Code #s provided in the Program Specifications)** | | | | | | |
| **1.1** | **2.1** | **2.2** | **2.3** | **3.1** | **3.2** | **4.1** |
| **1.1** | **X** |  |  |  |  |  |  |
| **1.2** | **X** |  |  |  |  |  |  |
| **1.3** | **X** |  |  |  |  |  |  |
| **2.1** |  |  |  | **X** |  |  |  |
| **2.2** |  | **X** |  |  |  |  |  |
| **2.3** |  |  | **X** |  |  |  |  |
| **2.4** |  | **X** | **X** |  |  |  |  |
| **2.5** |  | **X** |  | **X** |  |  |  |
| **3.1** |  |  |  |  | **X** |  |  |
| **3.2** |  |  |  |  | **X** | **X** |  |
| **4.1** |  |  |  |  |  |  | **X** |
| **4.2** |  |  |  |  |  |  | **X** |
| **4.3** |  |  |  |  |  |  | **X** |

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| 6. Schedule of Assessment Tasks for Students During the Semester | | | |
|  | Assessment task | Week Due | Proportion of Total Assessment |
| 1 | **Major Exam-1** | **7** | **15%** |
| 2 | **Major Exam-2** | **12** | **15%** |
| 3 | **Lab exam** | **13** | **10%** |
| 4 | **Quiz 1, Quiz 2, Quiz 3 & Quiz 4** | **3,5,9,11** | **5%** |
| 5 | **Homework 1, Homework 2, Homework 3& Homework 4** | **2,4,8,10** | **5%** |
| 6 | **Lab project 1 & 2** | **6,11** | **10%** |
| 7 | **Final Exam** | **>15** | **40%** |

D. Student Academic Counseling and Support

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| 1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice.   * **6 office hours weekly which gives the student a one to one help and advice in academic and personal level.** * **Using the Email also as a point of communication during the whole semester. This includes any arrangement out of the office hours.** * **Comments and any enquiry can also be done through the university Learning Management System (LMS)** * **The faculty website.** |

E Learning Resources

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| 1. List Required Textbooks   * Operating systems internals and design principles william stallings 7th edition 2016 |
| 2. List Essential References Materials (Journals, Reports, etc.)   * Operating System Concepts, written by Peter B. Galvin, Greg Gagne and Abraham Silberschatz, 8th Edition * Operating systems internals and design principles william stallings 7th edition |
| 3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) |
| 4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.   * [**http://williamstallings.com/OS/OS5e.html**](http://williamstallings.com/OS/OS5e.html) * [**http://ebook-dl.com/item/operating\_systems\_internals\_and\_design\_principles\_7th\_edition\_william\_stallings/**](http://ebook-dl.com/item/operating_systems_internals_and_design_principles_7th_edition_william_stallings/) * [**http://iit.qau.edu.pk/books/OS\_8th\_Edition.pdf**](http://iit.qau.edu.pk/books/OS_8th_Edition.pdf) * **www.lms.ksu.edu.sa** |
| 5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.   * **VMware** |

F. Facilities Required

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| Indicate requirements for the course including size of classrooms and laboratories |
| 1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)   * **Lecture room** * **Computer lab** * **Projector** * **E-Blackboard** |
| 2. Computing resources   * **30 PCs with I/O bootable ability** * **Linux operating system** * **Projector** * **Printer** * **Internet connection** |
| 3. Other resources   * **The computer assembly workshop lab** |

G Course Evaluation and Improvement Processes

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| 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching   * **Quick feedback in the first 5 min in every lecture in any general struggles which the student encounter** * **Course evaluation sheet.** * **One to one discussion with students when questions rise out of the lectures hours.** * **Direct communication with all the students to inform their view and providing their feedback on how are they successfully achieving the course goal.** |
| 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department   * **The department evaluation model for the teachers.** * **The student feedback on the course and the lecturer at the end of the course.** |
| 3. Processes for Improvement of Teaching   * **Exchange experience between faculty in the department workshops.** * **Attending training courses.** * **Evaluation of students feedbacks and marks** * **Follow the latest developments on the new releases (articles or books) related to course.** |
| 4. Processes for Verifying Standards of Student Achievement   * **Compare marks between exams.** * **Internal and external committees** |
| 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.   * **Technical skills outcome.** * **Feedback from external reviewer.** * **Comparing the course with other institutions.** |

Name of Instructor: **Mr Murad Abouammoh**

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date Report Completed: **06/6/2017**

Name of Field Experience Teaching Staff \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Program Coordinator: **Dr. Fayez AlQahtani**

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date Received: **08/6/2017**