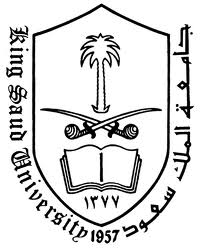
****

**King Saud University**

**Teachers College – Department of Computer**

**224 Comp: Introduction to Programming**

**Subject Outline**

**First Semester, 1433 H**

**GENERAL INFORMATION:**

**Subject Coordinator**

**Lecturer: Ghalib Alshammri**

**Email** [**galshammri@ksu.edu.sa**](mailto:galshammri@ksu.edu.sa) **Or** [**course.coordinator.ksu@gmail.com**](mailto:course.coordinator.ksu@gmail.com) **Or**

[**course.coordinator@hotmail.com**](mailto:course.coordinator@hotmail.com)

**Location: King Saud University – Teachers College Campus**

**Subject Organization:**

**First Semester, 1433H, Location: Teachers College Campus**

**Credit Points: 3 Credit Points**

**Contact hours per week: 1 × 2 hours lecture and 1 × 2 hours tutorial, Full Time**

**Lecture Time and Location: There are different sections, Room No. 143**

**Subject can be found at: LMS** **System**

**Students should check the subject's website or LMS system regularly as important information, including details of unavoidable changes in assessment requirements will be posted from time to time via the subject's website. Any information posted to the website is deemed to have been notified to all students.**

**Subject Description:**

**224 COMP introduces the basic concepts of algorithms and their relationship to data structures and problem solving. This subject emphasises problem solving techniques leading to the development of algorithms rather than their implementation or a formal mathematical treatment of algorithms. In addition, this subject will discuss Programming Languages, Types of Languages and Generation of Languages. Topics include flow charts, problem analysis, introduction to C++, components of C++, arrays, sorting, searching and trees.**

**Objectives:**

1. **The development of logical thinking.**
2. **Demonstrate an understanding the concepts of Algorithms.**
3. **Create algorithms for solving simple problems.**
4. **Determine the appropriate solution technique for a given problem.**
5. **Demonstrate an understanding of the concepts of time and space complexity as applied to simple algorithms.**
6. **Students can convert any algorithms to programming languages.**
7. **Discuss informally the computational efficiency of the principal algorithms for sorting, searching and trees algorithm.**
8. **Training students to use programming language as way to solve problems.**
9. **Encourage students to use programming language in computer applications.**
10. **Highlighting the role of programming languages in the design of educated software.**

**Subject Requirements:**

**102 COMP: Introduction to Computer Application.**

**Attendance Requirements:**

**It is the responsibility of students to attend all lectures/tutorials/labs/seminars/ practical work for subjects for which you are enrolled. It should be noted that the amount of time spent on each 3 credit point subject should be at least 4 hours per week, which includes lectures/tutorials/labs etc. Satisfactory attendance is deemed by the University, to be attendance at approximately 80% of the allocated contact hours.**

**Method of Presentation:**

**In order to maximize learning outcomes, it is strongly recommended that students attend all lectures. This subject comprises lectures and Tutorials. Tutorials will relate to the lecture topics. Lecture material will be available from the subject’s e-Learning website. Students are free to print their own copies of these slides. However, as these slides will not necessarily include all of the examples and explanations given in lectures, attendance at lectures will be required. Students can greatly reduce the amount of note taking by printing the electronic copies of the material prior to the lectures and annotating as necessary. Contact hours for this subject comprise 1x2 hour lecture plus 1x2 hour tutorial.**

**Lecture Schedule:**

**A proposal lecture schedule for the subject is as follows:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Topics** | **Date** | **Week** |
| **Registration** | **Subject Description**  **Registration Subject**  **General Information about Algorithms** | **19/7 – 25/7** | **1** |
| **Lecture**  **Reading** | **Computer Components**  **Introduction to Algorithms and Problem Solving, what is it and why do we need it?**  **Pseudo code and Flowcharts** | **19/7 – 25/7** | **2** |
| **Lecture**  **Tutorial** | **Introduction to C++**  **Structured Programming**  **C++ Components, Variables, Logic and Math Concepts.** | **26/7 – 2/8** | **3** |
| **Lecture**  **Tutorial** | **Elementary Algorithms**  **Control Structures (IF statement)** | **26/7 – 2/8** | **4** |
| **Tutorial** | **Control Structures (Loop statements)** | **3/8 – 9/8** | **5** |
|  | **First Exam + Solution + Result** | **3/8 – 9/8** | **6** |
| **Lecture + Tutorial** | **Arrays ❶** | **10/8 – 16/8** | **7** |
| **Lecture + Tutorial** | **Arrays ❷** | **10/8 – 16/8** | **8** |
| **Tutorial** | **Functions** | **17/8 – 23/8** | **9** |
| **Reading** | **Review** | **17/8 – 23/8** | **10** |
|  | **Second Exam + Solution + Result** | **24/8 – 1/9** | **11** |
| **Lecture + Tutorial** | ***namespace* concept** | **24/8 – 1/9** | **12** |
| **Lecture + Tutorial** | **Search techniques** | **2/9 – 8/9** | **13** |
| **Lecture + Tutorial** | **Sort techniques** | **2/9 – 8/9** | **14** |
| **Revision** | **Revision** | **9/9 – 15/9** | **15** |

**Changes to the above schedule will be posted via Website.**

**Any information posted to the web site is deemed to have been notified to all students.**

**Subject Materials:**

**Any readings/references are recommended only and are not intended to be an exhaustive list. Students are encouraged to use the library catalogue and databases to locate additional readings.**

**Textbook(s):**

* **Introduction to Algorithms, McGraw Hill, New York, Thomas H, Charles E. 2001**
* **The art of computer programming, Adisson wesley, Volume 3 Sorting & Searching, 1998**
* **Theory and Problems of Data Structures with C++, McGraw Hill, New York, John R. Hubbard, 2000**
* **C++ Programming: Program Design Including Data Structures, Course Technology (Thomson Learning), D.S. Malik, 2002**
* **مبادئ برمجة C++، الجزء الأول، الدكتور عوض منصور، جامعة اليرموك**
* **البرمجة بلغة C++، المهندس: مضر إسماعيل، 2008**
* **بنى البيانات بلغة C++، المهندس: ساري على الحاج حسين، 2010**
* **البرمجة (1)، الدكتور: زهير دحروج & غيداء ربداوي، 2005**

**Assessment:**

**This subject has the following assessment components.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Due Date** | **Individual/Group** | **% Mark** | **Assessment Items** |
| **Week 6** | **individual** | **15 %** | **First Exam** |
| **Week 11** | **Individual** | **15 %** | **Second Exam** |
|  | **Individual** | **40 %** | **Final Exam** |
| **check LMS system** | **Individual** | **10 % each** | **Assignments** |
| **lectures** | **Group** | **5% each** | **Reading Part** |

**Note1: All assignments are expected to be completed independently. Plagiarism may result in a FAIL grade being recorded for that assignment.**

**Note2: All result of assessments will be sent no later than two week from due date.**

**Supplementary Exams:**

**Supplementary Exams will be dealt with in accordance the policy of the university and the department of computer. Students, who cannot attend, should submit Special Consideration to Subject Coordinator as soon as possible to take necessary action about it and the application of rules and regulations on the student.**