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| **SE 465****Introduction to Geographic Information Systems**   |
| **Department of Civil Engineering****King Saud University** |
| Course Description: SE            465Introduction to Geographic Information Systems   (Required for a BSCE degree) | Definitions; data classification & acquisition; concepts of spatial data handling; analog & digital GIS; vector & raster data representation; functions; uses & status of GIS; selected applications using computer.3 (2, 0, 2) |
| Prerequisite  | SE 423 , SE 452 |
| Course learning Objectives | Students completing this course successfully will be able to1.        Understand concept of GIS.2.        create plots in ArcMap.3.        create a tabular & spatial databases. 4.        Know how to add layers, label & symbolize features.5.        query & join tables in a tabular database.6.        Geocoding methods for maps.7.        Map orientation, Digitizing Vector Maps.    |
| Topics Covered | 1.        Definitions. 2.        data classification & acquisition3.        concepts of spatial data handling.4.        analog & digital GIS.5.        vector & raster data representation6.        uses & status of GIS7.        selected applications using computer. |
| Class/ tutorial  Schedule | Two hours-lectures, 2-hours lab. |
| Computer Applications | ARCGIS 9.1Microsoft Access   |
|   Project | 1.        create a tabular & spatial databases.2.        A project for Digitizing Vector Maps |
| Contribution of Course to Meeting the Professional Component | 1.        Students learn how create a tabular & spatial databases. 2.        Students can spatial spatial  data by Digitizing Maps. 3.        Students practice team work in surveying. |
| Relationship of Course to Program Outcomes | a.        Students apply knowledge of mathematics, science and engineering [ABET a].b.        Students are able to identify and formulate an engineering problem and to develop a solution [ABET e].c.        Students can use the techniques, skills and modern engineering tools [ABET k].  |
| Textbook(s) and/or Other Required Material | P. Langley, Micheal, F. Goodchid, "Geographic Information Systems and Science", American Mathematical Society. |
| Grade Distribution | Lab and projects                 15  MarksAttendance and home works       5Two-Mid-term Exams                 30Final Exam                                 50Total                                          100 Marks |