

SE 365													
Principles of Remote Sensing & Image Interpretation													
Department of Civil Engineering													
King Saud University													
Course Description: SE 365 Principles of Remote Sensing & Image Interpretation (Required for a BSSE degree)	Concepts & definition of remote sensing; properties of electro-magnetic waves & the environment; ground truth; spectral signature & target identification; remote sensors (types & comparison); techniques utilized to interpret remote sensing imagery visually; emphasis on aerial photographs interpretation in a range of application areas; visual analysis of non-photographic remote sensing data; introduction to computer-assisted image interpretation & GIS. 3 (2,0,2)												
Prerequisite	SE 321 (Photogrammetry)												
Course learning Objectives	Students completing this course successfully will be able to 1- Discuss principles and concepts of remote sensing and image interpretation techniques. 2- Compute required image interpretation data. 3- Explain how to use image interpretation in various applications: resource management, engineering, land use and planning, environmental assessment as examples. 4- Apply computer assisted image interpretation and integration of interpreted data in GIS.												
Topics Covered	1. Concepts & definition of remote sensing & remote sensing elements. 2. Properties of electro-magnetic waves. 3. Ground truth & spectral signature. 4. Images & Remote sensing satellite systems. 5. Characteristics of images, interpretation scales, & stereoviewing. 6. Landforms, land use & land cover identification. 7. Different application of remote sensing & image interpretation 8. Introduction to computer-assisted image interpretation & integration of interpreted data in a GIS.												
Class/ tutorial Schedule	Two hours-lectures, 2-hours lab & field work Each week.												
Computer Applications	-Some minor application on ERDAS Imagine software.												
Project													
Contribution of Course to Meeting the Professional Component	1. Students learn how to make image interpretations & measurements. 2. Students can collect field data by taping on level & slope ground to produce thematic maps. 3. Students practice team work in remote sensing & image interpretation.												
Relationship of Course to Program Outcomes	a. Students apply knowledge of mathematics, science & engineering [ABET a]. b. Students are able to design & conduct experiments, 7 to analyze & interpret data [ABET b]. c. Students are able to identify & formulate an engineering problem & to develop a solution [ABET e]. d. Students are able to understand professional & ethical responsibility [ABET f]. e. Students are able to communicate effectively [ABET g]. f. Students have the broad education necessary to understand the impact of engineering solutions in a global & societal context [ABET h]. g. Students have knowledge of contemporary issues [ABET j] h. Students can use the techniques, skills & modern engineering tools [ABET k].												
Textbook(s) &/or Other Required Material	Lillesand , T.M., Kiefer, R. W. & J. Chipman, "Remote Sensing & Image Interpretation", 7th Ed. 2015, John Wiley.												
Grade Distribution	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Quizzes, Lab. & Home Work</td> <td style="text-align: right;">20 Marks</td> </tr> <tr> <td>Attendance</td> <td style="text-align: right;">5</td> </tr> <tr> <td>KACST Visit & Report</td> <td style="text-align: right;">5</td> </tr> <tr> <td>One to two-Mid-term Exams</td> <td style="text-align: right;">30</td> </tr> <tr> <td>Final Exam</td> <td style="text-align: right;">40</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">100 Marks</td> </tr> </table>	Quizzes, Lab. & Home Work	20 Marks	Attendance	5	KACST Visit & Report	5	One to two-Mid-term Exams	30	Final Exam	40	Total	100 Marks
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Prepared by	Dr. Ahmad H. Alashaikh												
Date of Preparation	Sep., 03 , 2022												