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| Faculty of Engineering  at Shoubra | Logo-Benha  Benha University  Model No.12 Course Specifications: Photo Interpretation and Remote Sensing |  |
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| **University** : Benha university |

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| **Faculty** : Faculty of Engineering at Shoubra |

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| **Department offering the program :** Surveying Engineering Department |
| **Department offering the Course :** Surveying Engineering Department |
| **1- Course Data** |
| |  |  |  |  | | --- | --- | --- | --- | | Course Code : SUR411 | Course Title : Photo Interpretation and Remote Sensing | Study Year : Fourth Year | | | Specialization : | Surveying Engineering Compulsory | | | | Teaching Hours: | | | | | Lecture : 3 | Tutorial : 1 | Practical : 1 |  | |

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| **2-  Course Aims** |
| For students undertaking this course, the aims are to: |
| |  | | --- | | 2.1- Conceive the concepts associated with the related applications of photo interpretation and remote sensing systems in a way that project the actual uses of those two in the Egyptian field of interest.  2.2- Interpret a satellite image specifying different aspects of land cover and land uses | |

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| **3- Intended Learning Outcomes of Course (ILOS)** |
| |  | | --- | | **a-  Knowledge and Understanding** | | On completing this course, students will be able to: | | |  | | --- | | a1 Identify different approaches of solving engineering issues, data collection and interpretation. (a5) | | a2 Recognize different remote sensing forms and different data sources (field-maps-images). (a14) | | a3 Explain remote sensing process, from data capturing up to information extraction. (a16) | | |  | | | **b-  Intellectual Skills** |  | | At the end of this course, the students will be able to: |  | | |  | | --- | | b1 Assess the rectification process of satellite images using different geometric models(b11). | | b2 Determine different uses of satellite images(b15). | |  | |  | | | **c-  Professional Skills** |  | | On completing this course, the students are expected to be able to: |  | | |  | | --- | | c1 Evaluate horizontal accuracy of the orthorectified images. (c10) | | c2 Perform spatial analysis for the orthorectified satellite images using GIS(c17). | |  | |  | | | **d-  General Skills** |  | | At the end of this course, the students will be able to: |  | | |  | | --- | | d1 Work in team work for a remote sensing pilot project. |   (d6) |  | |  | | |

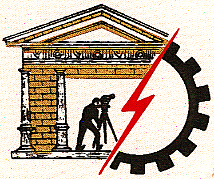
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| **4- Course Contents** |
| |  |  | | --- | --- | | **No.** | **Topics** | | 1 | Introduction to Visual Image interpretation | | 2 | Multispectral, thermal and hyperspectral sensing | | 3 | Earth resource satellite operating in the optical spectrum | | 4 | Principles of digital image Processing | | 5 | Production of topographic maps from satellite imagery | | 6 | LandSat 1-2-3-4-5 | |

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| **5- Teaching and Learning Methods** |
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| |  | | --- | | 5.1- Lectures | | 5.2- Practical training / laboratory | | 5.3- Project work  5.4- Reports  5.5- Computer based work | |

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| **6- Teaching and Learning Methods of Disables** |
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| **7- Student Assessment** |
| |  | | --- | | **a- Student Assessment Methods** | | |  |  | | --- | --- | | 1 | Mid-term exam | | 2 | Oral exam | | 3 | Final exam | | 4 | Project | | |  | | | **b- Assessment Schedule** |  | | |  |  |  | | --- | --- | --- | | **No.** | **Assessment** | **Week** | | 1 | Mid-term exam | 8 | | 2 | Oral exam | 14 | | 3 | Final exam | 15 | | 4 | Project | 12 | |  | |  | | | **c- Weighting of Assessments** |  | | |  |  | | --- | --- | | **Assessment** | **Weight** | | Mid-term Examination | 10 % | | Final Term Examination | 60 % | | Oral Examination | 20 % | | Semester work | 10 % | | Other types of assessment | 0 % | | Total | 100 % | |  | |  | | |

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| **8- List of References** |
| |  | | --- | | **a- Course Notes** | | |  | | --- | | 1- Course notes prepared by instructor. | | | **b- Books** | | |  | | --- | | 1- Lillesand, T.M., Kiefer, R.W. and Chipman, J.W., 2008. Remote Sensing and Image Interpretation. Sixth Edition, John Willey & Sons, Inc. | | 2- Schowengerdt, R.A., 2006. Remote Sensing: Models and Methods for Image Processing. Third Edition, Elsevier Inc., USA. | | 3- John A. Richards and Xiuping Jia, 2006. Remote sensing digital image analysis, Springer, Germany. | | 4- Chen, C. H., 2008, Image processing for remote sensing .Taylor & Francis Group, LLC., USA. | |  | | | **c- Web Sites** | | |  | | --- | | 1- www.Imagery-Central.com | | 2- www.spotimage.fr/html | | 3- www.fes4surveying.wordpress.com | | |



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| Faculty of Engineering  at Shoubra | Model No.11A Course Specifications : Photo Interpretation and Remote Sensing | Benha university |
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| **University** : Benha university |

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| **Faculty** : Faculty of Engineering at Shoubra |

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| **Department** : Surveying Engineering Department |

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| **Matrix of Knowledge and Skills of the course** |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **No.** | **Topics** | **week** | **Basic Knowledge** | **Intellectual Skills** | **Professional Skills** | **General Skills** | | 1 | Introduction to visual image interpretation | 1 | a1 |  |  |  | | 2 | Introduction to visual image interpretation | 2 | a1 | b1 | c1 |  | | 3 | Introduction to visual image interpretation | 3 | a1 | b1 | c2 |  | | 4 | Multispectral, thermal and hyperspectral sensing | 4 | a2 | b1 |  | d1 | | 5 | Multispectral, thermal and hyperspectral sensing | 5 | a2 | b1 |  |  | | 6 | Earth resource satellite operating in the optical spectrum | 6 | a2 | b2 |  |  | | 7 | Earth resource satellite operating in the optical spectrum | 7 | a2 |  |  |  | | 8 | Midterm Exam | 8 | - | - | - | - | | 9 | Principles of digital image Processing | 9 |  |  | c2 | d1 | | 10 | Principles of digital image Processing | 10 |  | b2 | c1 |  | | 11 | Production of topographic maps from satellite imagery | 11 | a1 |  |  | d1 | | 12 | Production of topographic maps from satellite imagery | 12 |  | b1 | c2 |  | | 13 | LandSat 1-2-3-4-5 | 13 |  | b2 | c1 |  | | 14 | Oral Exam | 14 | - | - | - | - | | 15 | Final exam | 15 | - | - | - | - | |

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|  | **The Matrix of The Relation Between The Course’ Aims The ILOS of The Course** | | | | | | | | |
| **No** | **Photo Interpretation and Remote Sensing** | **a1** | **a2** | **a3** | **b1** | **b2** | **c1** | **c2** | **d1** |
| 1 | Conceive the concepts associated with the related applications of photo interpretation and remote sensing systems in a way that project the actual uses of those two in the Egyptian field of interest. | √ | √ |  | √ |  |  |  |  |
| 2 | Be able to interpret a satellite image specifying different aspects of land cover and land uses. |  |  | √ |  | √ | √ | √ | √ |

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| **- Course Coordinator :    Nader Ismail Hasan Ismail** |

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| **- Head of Department :   Mohamed Ibrahim Moustafa Zahran Date: 6 / 9 / 2015** |