

COURSE OUTLINE: GIS422 - INTRO-REMOTE SENSING

Prepared: Heath Bishop

Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title GIS422: INTRODUCTION TO REMOTE SENSING Program Number: Name 4018: GIS-APPLICATION SPEC Department: GEOGRAPHIC INFORMATION SYSTEMS Semesters/Terms: 19F Course Description: Through accessing satellite imagery, the student will gain a theoretical background in remote sensing party reactional abilities in the PCI Geomatica and ArcGIS software environments. Topics to be covered include: remote sensing party sics, data sources, image enhances integration. Total Credits: 5 Total Credits: 5 Total Credits: 75 Prerequisites: There are no pre-requisites for this course. Corequisites: GIS431, GIS440 Vocational Learning Outcomes (VLO's) accessing and protection SPEC VLO 1 Understand the general concepts of spatial information and the current methodologies used to input, store, manipulate, and retrieve this type of data in a complete fising of program web page for a complete fising of program web pages for a completered in to a GIS, and the method dougis used to inpu		Victures, chair, recriminingy and chined mades			
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Communication.	Skills (EES) addressed in				
EES 3 Execute mathematical operations accurately.					
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	EES 4 Apply a systematic approach to solve problems.						
		Locate, select, organize, and document information using appropriate technology and information systems.					
	EES 7 Analyze, evaluate,	-					
		Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.					
	EES 10 Manage the use of	Manage the use of time and other resources to complete projects.					
	EES 11 Take responsibility	for ones own actions, decisions, and consequences.					
Course Evaluation:	Passing Grade: 50%, D						
Other Course Evaluation & Assessment Requirements:	In addition to a passing grade in the course overall, students must also achieve an average mark of at least 50% on the test components in order to pass the course.						
	Grade Definition Grade Point Equivalent A+ 90 - 100% 4.00 A 80 - 89% B 70 - 79% 3.00 C 60 - 69% 2.00 D 50 - 59% 1.00 F (Fail) 49% and below 0.00						
	CR (Credit) Credit for diploma requirements has been awarded. S Satisfactory achievement in field /clinical placement or non-graded subject area. U Unsatisfactory achievement in field/clinical placement or non-graded subject area. X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course. NR Grade not reported to Registrar's office. W Student has withdrawn from the course without academic penalty.						
Course Outcomes and	Course Outcome 1	Learning Objectives for Course Outcome 1					
Learning Objectives:	1. Explain the foundations of optical remote sensing.	 Describe remote sensing energy sources and radiation principles. Describe the colour mixing process. Describe the electromagnetic spectrum. Describe energy interactions with earth surface features. 					
	Course Outcome 2	Learning Objectives for Course Outcome 2					
	2. Describe remote sensing applications and sensors.	2.1 Describe high, medium and low resolution satellite sensors.2.2 Describe the Landsat program including variations between mission technology.2.3 Identify the differences between imaging sensors and appraise their varying level of appropriateness depending on the project at hand.					
	Course Outcome 3	Learning Objectives for Course Outcome 3					
	3. Perform spectral image interpretation.	3.1 Perform spectral image analysis through the use of filters, enhancements and spectral signatures.					
	Course Outcome 4	Learning Objectives for Course Outcome 4					

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	4. Perform statistical processes on optical imagery.		 4.1 Create and utilize image histograms and scatterplots to further interpret imagery. 4.2 Apply band mathematics and image transformations (band ratios, vegetation indices and principle component analyses) to imagery. 		
			Learning Objectives for Course Outcome 5		
	5. Demonstrate the ability to perform image classifications.		 5.1 Collect regions of interest as classification training data. 5.2 Complete a supervised classification. 5.3 Complete an unsupervised classification. 5.4 Transfer classification results to a GIS environment. 5.5 Perform Feature extraction. 5.5 Determine statistical accuracy of classifications. 		
	Course Outcome 6 6. Perform a change over time study using Landsat data.		Learning Objectives for Course Outcome 6		
			 6.1 Identify and download appropriate satellite imagery. 6.2 Organize and store satellite imagery in an appropriate format. 6.3 Perform change over time analyses. 6.4 Quantify and effectively display results. 		
Evaluation Process and	Evaluation Type	Evaluatio	n Weiaht		
Grading System:	Assignments	50%			
	Tests	50%			
Date:	August 29, 2019				
Addendum:	Please refer to the information.	course out	line adder	ndum on the Learning Management System for further	

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