Student Learning Objective   Unit 1: An Introduction to Geospatial Science and Mapping   Ter 2, Ter 4	GEOG 1890 – Exploring Our World Through Geospatial Technology				
Describe Characteristics and appropriate uses of common map projections  Tier 2, Tier 4  2.4: Geography, 4.1: Core geospatial abilities and knowledge (Earth Geometry and Geodesy)  Describe the fundamental concepts and applications of geographic technologies and their use in collecting, analyzing and displaying geospatial data  Demonstrate the use of web mapping tools to study and develop possible solutions to real world problems  Tier 1, Tier 3  Demonstrate the use of web mapping tools to study and develop possible solutions to real world problems  Tier 2, Tier 4  4.1: Core Geospatial abilities and knowledge (Data quality, GIS) and decision making 3.5: Working with tools and technology  Tier 2, Tier 3  1.4: Initiative, 3.4: Problem solving and decision making 3.5: Working with tools and technology  Tier 2, Tier 3  Describe and explain the historical development of GIS&T and how GIS&T helps to solve problems within a spatial context  Tier 4, Tier 5  Demonstrate basic proficiency in map reading, interpretation, and design principles, including map projections and the geographic grid  Describe, compare and contrast vector versus raster data models  Analyze the relationship between scale and the level of geographic detail in representation  Describe the scientific method, including the foundation of a problem, the collection of data through observation and experiment, and the formulation and testing of a hypothesis  Unit 2: Sources of Spatial Data, GPS, and Spatial Analysis  Tier 2, Tier 4  1.1: Core Geospatial abilities and knowledge (GIS)  Tier 2  2.5: Science and Engineering (Scientific Method)  Describe the fundamental concepts and applications of remote sensing and global positioning systems  Tier 4, Tier 5  Describe and demonstrate how to access different sources of data, describe the fundamental concepts and applications of remote sensing and global positioning systems  Tier 2, Tier 4  2.4: Geography (Geographic Skillis), A1: Core Geospatial abilities and knowledge (Coltoning systems), Sience and demonstrate		-	GTCM (2014)		
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Unit 2: Sources of Spatial Data, GPS, and Spatial Analysis  Describe the fundamental concepts and applications of remote sensing and global positioning systems  Tier 2, Tier 4  2.4: Geography (Geographic Skills), 4.1: Core Geospatial abilities and knowledge (Positioning systems, Remote sensing and photogrammetry)  Describe and demonstrate how to access different sources of data, describe the process for creating data and discuss the fundamental concepts of data quality, topology and uncertainty  Identify, explain, and interpret spatial patterns and relationships, such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 2, Tier 4  2.4: Geography (Geographic Skills), 4.1: Core Geospatial abilities and knowledge (Data quality), 5.1: Positioning and Data Acquisition  Tier 4, Tier 5  4.1: Core Geospatial abilities and knowledge (Data quality), 5.1: Positioning and Data Acquisition  Tier 2  2.4: Geography (Geographic Perspectives)	I' -				
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Describe the fundamental concepts and applications of remote sensing and global positioning systems  4.1: Core Geospatial abilities and knowledge (Positioning systems, Remote sensing and photogrammetry)  Describe and demonstrate how to access different sources of data, describe the process for creating data and discuss the fundamental concepts of data quality, topology and uncertainty  Identify, explain, and interpret spatial patterns and relationships, such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 5. 5.2: Analysis and Modeling					
bescribe the fundamental concepts and applications of remote sensing and global positioning systems    Remote sensing and photogrammetry		Tier 2, Tier 4			
sensing and global positioning systems  Rowledge (Positioning systems, Remote sensing and photogrammetry)  Describe and demonstrate how to access different sources of data, describe the process for creating data and discuss the fundamental concepts of data quality, topology and uncertainty  Identify, explain, and interpret spatial patterns and relationships, such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 5. S 2: Analysis and Modeling	Describe the fundamental concepts and applications of remote		· ·		
Describe and demonstrate how to access different sources of data, describe the process for creating data and discuss the fundamental concepts of data quality, topology and uncertainty  Identify, explain, and interpret spatial patterns and relationships, such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 5. 15.2: Analysis and Modeling					
Describe and demonstrate how to access different sources of data, describe the process for creating data and discuss the fundamental concepts of data quality, topology and uncertainty  Identify, explain, and interpret spatial patterns and relationships, such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 4, Tier 5  4.1: Core Geospatial abilities and knowledge (Data quality), 5.1: Positioning and Data Acquisition  Tier 2  2.4: Geography (Geographic Perspectives)			_		
Describe and demonstrate how to access different sources of data, describe the process for creating data and discuss the fundamental concepts of data quality, topology and uncertainty  Identify, explain, and interpret spatial patterns and relationships, such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 5. S 2: Analysis and Modeling		Tier 4. Tier 5			
describe the process for creating data and discuss the fundamental concepts of data quality, topology and uncertainty  Identify, explain, and interpret spatial patterns and relationships, such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 5. 5.2: Analysis and Modeling	Describe and demonstrate how to access different sources of data,	1101 4, 1101 3	·		
Identify, explain, and interpret spatial patterns and relationships, such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 5. 5.2 Analysis and Modeling					
such as how places are similar and different, the nature of transitions between places, and how places are linked at local, regional and /or global scales  Tier 5 5 2 Analysis and Modeling	concepts of data quality, topology and uncertainty		r controlling and Data rioquisition		
transitions between places, and how places are linked at local, regional and /or global scales  Tier 5 5 2 Analysis and Modeling	Identify, explain, and interpret spatial patterns and relationships,	Tier 2	2.4: Geography (Geographic		
regional and /or global scales  Tier 5 5 2: Analysis and Modeling	such as how places are similar and different, the nature of		Perspectives)		
Tier 5 5 2: Analysis and Modeling	transitions between places, and how places are linked at local,				
Tier 5 5.2: Analysis and Modeling	regional and /or global scales				
Describe the use of overlaying, buttering and basic spatial statistics	Describe the use of overlaying, buffering and basic spatial statistics	Tier 5	5.2: Analysis and Modeling		
to analyze the spatial relationships of geographic features.					
		Tior 5	E 2: Applysis and Madeline	Sooms difficult to implement become all	
Explore the concept of augmented reality and its relationship to  Tier 5  5.2: Analysis and Modeling (Organizational and institutional be interesting.	Explore the concept of augmented reality and its relationship to	1161 3		Seems difficult to implement, however would	
location-based services aspects	location-based services			of macresting.	
Tier 5 5.2: Analysis and Modeling		Tier 5			
Explore the capabilities of mobile devices for map making (Organizational and institutional	Explore the capabilities of mobile devices for map making				
geographic information systems.  aspects	geographic information systems.				
Demonstrate the ability to use geographic technologies in  Tier 5  5.1: Positioning and Data	Demonstrate the ability to use geographic technologies in	Tier 5	_		
acquisition, 5.2: Analysis and	collecting, analyzing and displaying geospatial data		acquisition, 5.2: Analysis and		
Modeling			Modeling		
Unit 3: Remote Sensing and Image Analysis		T: 4	A 4. Com Constitution		
Tier 4 4.1: Core Geospatial abilities and	Discuss and demonstrate different to the transfer of the trans	Her 4	-		
Discuss and demonstrate different techniques of image processing knowledge (Remote Sensing and Image interpretation					
image analysis and image interpretation photogrammetry, Geospatial Data)	image analysis and image interpretation		photogrammetry, Geospatiai Data)		
Tier 4 4.1: Core Geospatial abilities and		Tier 4	4.1: Core Geospatial abilities and		
Explain the difference between active and passive sensors, citing knowledge (Remote Sensing and			-		
examples of each and how they are deployed photogrammetry, Geospatial Data)					
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Tier 4	4.1: Core Geospatial abilities and
	knowledge (Remote Sensing and
	photogrammetry, Geospatial Data)
Tier 5	5.1: Positioning and data
	acquisition (Critical work functions)
Tier 4, Tier 5	4.1: Core Geospatial abilities and knowledge (Cartography visualization, GIS) 5.2: Analysis and Modeling (Critical work functions, Organizational and Institutional aspects)
Tier 4, Tier 5	4.1: Core Geospatial abilities and knowledge (Data Quality, Cartography, Geospatial data, Cartography and visualization) 5.1: Positioning and data acquisition (Critical work functions)
Tier 4	4.1: Core Geospatial abilities and Knowledge (Professionalism)
Tier 4, Tier 5	4.1: Core Geospatial abilities and Knowledge (Programming , application development, and geospatial information technology) 5.3: Software and application development (Critical work
	Tier 5  Tier 4, Tier 5  Tier 4, Tier 5