GEOG 2400/4400 - Cartography and Map Design

	GTCM (2014)		
Student Learning Objective	**Tier Number**	**Subdivision**	**Comments**
Unit 1: Introduction to Cartographic Design			
Describe what a map is	Tier 2, Tier 4	2.1: Reading (Comprehension, Information Analysis) 2.4 Geography (Geographic Skills) 4.1: Core Geospatial Abilities and Knowledge (Earth Geometry and Geodesy, Cartography)	
Describe different types of maps and their uses	Tier 2, Tier 4	2.1: Reading (Comprehension, Information Analysis) 2.4 Geography (Geographic Skills) 4.1: Core Geospatial Abilities and Knowledge (Earth Geometry and Geodesy, Cartography, Cartography and visualization)	
Describe what cartography is	Tier 2, Tier 4	2.4: Geography (Geographic Skills) 4.1: Core Geospatial Abilities and Knowledge (Cartography)	
Discuss cartography's historical perspective	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Cartography)	The GTCM does not mention anything about knowing the history of Cartography
Describe the Map Communication Model and its use in creating maps	N/A	N/A	Not in the GTCM
Unit 2: Data Standardization and Classification			
Investigate and demonstrate their understanding of various types and sources of data	Tier 3	3.2: Creative Thinking (Employing Unique Analysis) 3.5: Working with Tools and Technology: (Keeping current on tools and technology)	
Describe how data can be transformed, organized and normalized	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Data Quality, Geospatial Data)	
Describe the difference between Median, Mean and other statistical terms.	Tier 2	2.3: Mathematics 2.4 Geography(Geographic Skills)	
Organize attribute data into groups (Natural breaks, Quantile, equal interval)	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Data Quality, Geospatial Data, GIS)	
Demonstrate the difference between qualitative and quantitative methods	Tier 2, Tier 4	2.4: Geography (Geographic Skills) 4.1: Core Geospatial Abilities and Knowledge (Data Quality)	
Describe the difference between nominal, ordinal, interval or ratio scales	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Data Quality)	The different categories are not mentioned in the GTCM
Unit 3: Map Projections			
Describe the different types of maps projections and how they are created	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Earth Geometry and Geodesy, Geospatial Data, Cartography and Visualization)	
Describe the difference between case and aspect in relation to Map Projections	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Earth Geometry and Geodesy, Geospatial Data, Cartography and Visualization)	There is nothing about case and aspect in the GTCM
Recognize and select the appropriate map projection based on least distortion possible for a given map	Tier 3, Tier 4, Tier 5	3.5: Working with Tools and Technology (Selecting tools) 4.1: Core Geospatial Abilities and Knowledge (Earth Geometry and Geodesy) 5.2: Analysis and Modeling (Critical Work Functions)	
Create cartographic products and visualization using an appropriate map projection based on data types, types of analysis, regions being	Tier 3, Tier 4, Tier 5	3.5: Working with Tools and Technology (Selecting tools) 4.1:	
Unit 4: Symbolization			
Define what a map is	Tier 2, Tier 4	2.1: Reading (Comprehension,	
Describe different dimensions of vector features	Tier 3	3.5: Working with Tools and	
Describe how a maps scale affects feature selection	Tier 2, Tier 4	2.4 Geography (Geographic	There is not too much of thinking about the map scale in the GTCM, however is
Describe the difference between discrete (discontinuous) and continuous types of features	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Data Quality, GIS, Data	
Describe measurement scales (Nominal, Ordinal, Interval and Ratio	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Data Quality)	
Select symbols for different data formats (Raster/Vector) and map scale	Tier 3, Tier 4, Tier 5	3.5: Working with Tools and Technology (Selecting tools) 4.1: Core Geospatial Abilities and	
Describe and demonstrate different types of symbolization used in thematic maps	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Cartography, Cartography and Visualization)	
Describe different types of symbolization for quantitative versus qualitative data	Tier2, Tier 4	2.4: Geography (Geographic Skills) 4.1: Core Geospatial Abilities and Knowledge (Data	The GTCM does not ask to specify the difference between the Qualitative verse Quantitative.
Describe different map types and its symbolization	Tier 2, Tier 4	2.1: Reading (Comprehension,	

Unit 5: Map Elements			
Create maps using map elements correctly	Tier 2, Tier 4	2.2: Writing 4.1: Core Geospatial	
Create maps that use map area effectively	Tier 4	4.1: Core Geospatial Abilities and	
Create insert maps	Tier 5	4.1: Core Geospatial Abilities and	
Include titles and subtitle, legends and data sources	Tier 4, Tier 5	4.1 Core Geospatial Abilities and	
Include appropriate type of map scale	Tier 4, Tier 5	4.1 Core Geospatial Abilities and	
Include appropriate North Arrows	Tier 4, Tier 5	4.1 Core Geospatial Abilities and	
Understand and use appropriate type sizes for map elements	Tier 4, Tier 5	4.1 Core Geospatial Abilities and	
Unit 6: Color in Cartography			For the whole color unit the GTCM does not mention it anywhere else other than
Understand the basic concepts in the use of color	Tier 4	4.1: Core Geospatial Abilities and	
Describe the physical and psychological concepts of color	Tier 4	4.1: Core Geospatial Abilities and	
Describe the difference between additive and subtractive primary colors	Tier 4	4.1: Core Geospatial Abilities and	
Describe Qualitative and Quantitative color conventions	Tier 4	4.1: Core Geospatial Abilities and	
Describe how to use theme oriented color schemes	Tier 4	4.1: Core Geospatial Abilities and	
Appropriately use tools to choose colors for different types of maps	Tier 4	4.1: Core Geospatial Abilities and	
Unit 7: Zymology, Typography and Labeling			
Use appropriate zymology size and shape for maps	Tier 4, Tier 5	4.1: Core Geospatial Abilities and	
Understand how map projections affect zymology	Tier 4	4.1: Core Geospatial Abilities and	
Choose appropriate type, size and color of symbols	Tier 4, Tier 5	4.1: Core Geospatial Abilities and	
Create appropriate Legends for different types of symbols	Tier 4, Tier 5	4.1: Core Geospatial Abilities and	
Effectively use different styles and sizes of type for labels	N/A	N/A	GTCM does not mention anything about labels
Understand how to arrange and place labels on maps	N/A	N/A	
Unit 8: Map Types and Visualization			
Compare the different types of maps	N/A	N/A	This area is really lacking in the GTCM
Describe what an Isarithimc map is and how it is used	N/A	N/A	GTCM does not say anything about Isarithmic maps
Describe and appropriately choose a type of thematic map to visualize spatial data	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Earth Geometry and	
Unit 9: Cartographic Design Printed maps and Digital Maps on the Web			
Describe how the design process is affected by the way it will be reproduced	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Cartography, Cartography and Visualization)	
Describe a copyright trap	N/A	N/A	GTCM does not mention copyright trap. Probably would be important to know.
Demonstrate the steps to effectively edit a map	Tier 4	4.1: Core Geospatial Abilities and	
Understand the process and tools used in printing maps	Tier 3, Tier 4	3.5: Working with Tools and	
Describe and use the seven design process steps	Tier 4	4.1: Core Geospatial Abilities and	I don't know what the seven step design process is and it is not mentioned in the
Discuss the principle of visual Hierarchy, Contrast, Figure-Ground, and Balance	Tier 4	4.1: Core Geospatial Abilities and Knowledge (Cartography,	
Unit 10: Cartographic Design and Case Study			
Design a map that communicates effectively	Tier 4	4.1: Core Geospatial Abilities and	
Discuss map design research	Tier 4	4.1: Core Geospatial Abilities and	
Follow the steps and principles to create an effective map	Tier 4, Tier 5	4.1: Core Geospatial Abilities and	