

SE 453 Cartography and GIS

Credit and Contact hours	3 / 2 (Lectures), 0 (Tutorials), 2 (Laboratory)								
Required, or Elective	Required for a BSCE degree								
Course Description	Introduction; map classification; map use; sources of spatial information; introduction to GIS; data coding using GIS; layers concept and data modelling; cartographic generalization; map production and printing using GIS.								
Prerequisites or Co-requisites	SE 315								
Course Learning Outcomes	<p>Students completing this course successfully will be able to</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Course Learning Outcomes</th> <th style="text-align: center;"><i>Related Student Outcomes (SO)</i></th> </tr> </thead> <tbody> <tr> <td>CLO1: Discuss concepts of cartographic design, data coding and modelling in GIS</td> <td style="text-align: center;">SO7</td> </tr> <tr> <td>CLO2: Design and produce a map</td> <td style="text-align: center;">SO2</td> </tr> <tr> <td>CLO3: Solve cartographic problems such as linear transformation producing group report in GIS</td> <td style="text-align: center;">SO1</td> </tr> </tbody> </table>	Course Learning Outcomes	<i>Related Student Outcomes (SO)</i>	CLO1: Discuss concepts of cartographic design, data coding and modelling in GIS	SO7	CLO2: Design and produce a map	SO2	CLO3: Solve cartographic problems such as linear transformation producing group report in GIS	SO1
Course Learning Outcomes	<i>Related Student Outcomes (SO)</i>								
CLO1: Discuss concepts of cartographic design, data coding and modelling in GIS	SO7								
CLO2: Design and produce a map	SO2								
CLO3: Solve cartographic problems such as linear transformation producing group report in GIS	SO1								
Student Outcomes	<p>SO1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics, and using modern engineering tools</p> <p>SO 2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety;</p> <p>SO 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies</p>								

Topics Covered	List of Topics		Related CLOs
	1. Introduction		CLO1
	2. layers concept and data modelling in GIS		CLO1
	3. cartographic representation & map symbols		CLO1
	4. map classification and design		CLO2
	5. names & lettering		CLO1
	6. cartographic generalization		CLO2
	7. map production techniques, map reproduction & updating;		CLO2
	8. linear transformations		CLO3
	9. map production and printing using GIS.		CLO3
Textbook(s) and Other Required Material	Textbook: Gretchen N. Peterson. "GIS Cartography: A Guide to Effective Map Design". CRC Press (April 6, 2009). ISBN-10: 1420082132, ISBN-13: 978-1420082135		
Grading System	Tutorials problems and attendance	20%	
	Mid-Term 1	20%	
	Mid-Term 2	20%	
	Final Exam	40%	
Instructors	Dr. Bashar Kamal Bashir (2A19); e-mail: bbashir@ksu.edu.sa - (2 nd Semester 20-21)		
Date of Review	Nov, 2020		