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onGEO Professional Certificate Course: ONGEO-N004.(32), Cartography
Fall 2016: Second Session: *Syllabus*

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Course Description:

Maps can provide important visual explanations of complex geographic information. This course introduces map design in three parts. Our first emphasis will be on graphic design and typography, the second part of the course will focus on reference map design and production, and the final unit will integrate design principles and contemporary media. The online lessons offer conceptual explorations of mapping sciences and arts, giving you examples of well-designed (and sometimes poorly designed!) maps that illustrate specific mapping techniques. The labs offer hands-on experience in cartographic representation, graphic and web design, and map production. By the end of the semester, you will know a lot about how and why maps are made. You will also have a practical skill set that will enable you to communicate ideas via graphics.

Course Audience:

Professionals and students who are currently working in fields that use geospatial technologies and pursuing training opportunities (required or by choice), professionals and post-baccalaureates looking to advance or revamp their current career path, teachers pursuing continuing-education credits, and international students seeking an educational experience and certification from an American university.

Course Goals:

1. Know the principles of well-designed maps for various output media.
2. Articulate the value of graphics, including maps, to communicate information.
3. Use mapping and graphics software to create original maps that follow established cartographic design principles.

Course Learning Outcomes (Objectives):

At the conclusion of this course, students will be able to:

1. Design informative reference maps based on well-established cartographic principles.
2. Create well-designed and informative maps using ESRI ArcMap and Adobe Illustrator software.
3. Critique maps from other sources based on the principles of good cartographic design.
4. Understand how factors such as typeface and color choice, labeling, and map layout can strongly influence communication of geographic information.
5. Design a simple website and upload files to that website.

Course Requirements and Recommendations:

Required

• **Textbook**: *Designing Better Maps: A Guide for GIS Users*, 2nd Edition by Cynthia A. Brewer, 2015. ESRI Press. (ISBN: 9781589484405). Available in paperback.
  o   A copy of the textbook is also on reserve in the MSU library.
• **Technological**:

- o **Computer** – A PC or Mac can be used to access D2L for lesson material. **Microsoft Windows is required** for all online labs (in order to log into the remote server); check the directions for each lab. You cannot work on the labs with a Mac unless it is running Windows.
  - o **Web browser** -- Preferably Mozilla Firefox 3.6+ or Microsoft Internet Explorer 9.0+. Use of other browsers will lead to quiz and lab malfunctions.
  - o Applications/plugins (see the Computer Setup page for details; some required applications are provided for you on the Course FTP site).
- **General**:
  - o You are required to complete each lesson and are responsible for all of its associated components (for example, web links, lesson questions, text readings, assignments, labs, self-assessments, and so on).
  - o You are also required to take the assessments and submit your responses to labs ON TIME.

Highly Recommended

- **HIGH-SPEED internet connection**: You will need a high-speed internet connection to take this course. Students attempting to take this course with a dial-up connection will have difficulty dealing with the large files associated with our lessons and, more importantly, lab exercises.

  Please Note:

  All course emails will be sent to your Michigan State (mail.msu.edu) or Community ID email account only via the D2L system. You will need to check this email account at least once a day for emails from your Instructor and Online Geography staff. If you need to, please set your Michigan State account to forward your emails to an account that you do check frequently.

Course Organization:

While a team of faculty and staff developed and manages the course, an Instructor teaches each section. Moreover, this course is delivered through a series of online lessons and textbook readings. Course assessments are accomplished through online quizzes and online labs.

Course Authors, onGEO Staff, and Your Instructor

Beth Weisenborn is responsible for this course, from the day-to-day management to the grading. Beth takes care of instruction, grading labs and quizzes, any content questions you may have, any questions about how to work through the course, and final grades. ALL email correspondence should go to your instructor. **Dr. Yi Shi** will also be assisting with the course.

Juliegh Bookout and Beth Weisenborn are staff members of onGEO courses at Michigan State University, so you may receive notices from them occasionally.

Dr. Kirk Goldsberry and Ms. Adrienne Goldsberry are the original authors of the course content. Cadi Fung, Juliegh Bookout, and Beth Weisenborn were content editors. While this group of Online Geography (onGEO) faculty and staff developed the course, they are not involved in the day-to-day workings of the course -- your instructor is responsible for course delivery and instruction.

Lessons

This course consists of **11 online lessons** (or lectures) and **7 online labs**.

<u>Lesson</u>	<u>Topic</u>	<u>Text Readings</u>	<u>Lab</u>
1	Introduction to Design - Part 1: Introduction to the Course - Part 2: What is Cartographic Design? - Part 3: Principles of Cartographic Design		Activity. Remote-server Logon
2	Map Design - Part 1: What Information Is Being Mapped? - Part 2: Who Will Be Reading Your Map? - Part 3: Is the Map Content Coordinated with Written Content or Other Graphics? - Part 4: What Size and Medium Will Be Used to Display the Map? - Part 5: What Are the Time and Budget Constraints on a Map's Production?	Chapter 1, Pages 2 to 5; Chapter 4	1. Creating an Online Portfolio
3	Typography I - Part 1: What Is Typography? - Part 2: Fonts and Typefaces - Part 3: Principles of Typography - Part 4: Anatomy of Characters in a Typeface	Chapter 5	2. Adobe Illustrator Tools and Objects
4	Typography II - Part 1: How to Choose a Typeface - Part 2: Type Size, Spacing, and Effects - Part 3: Text and Label Placement - Part 4: Labels as Symbols	Chapter 6	3. Typography and Cartography 4. Cartographic Labeling
5	Color in Cartography - Part 1: Color 101 - Part 2: Choice of Colors - Part 3: Color on Thematic Maps - Part 4: Mixing Colors - Part 5: Color Blindness - Part 6: Simultaneous Contrast - Part 7: Converting Color to Black and White	Chapter 7; Chapter 8, Pages 169 to 173	
6	Visual Variables -Part 1: Background on Visual Variables -Part 2: Visual Variables -Part 3: How Are Visual Variables	Chapter 9	

		Used? Part 4: Making Sense of it All		
	7	Map Elements and Layout	Chapter 1, Pages 6 to 16; Chapter 3; Additional reading in lesson	5 and 6. Map of Michigan
	8	Terrain I	See readings in lesson; Chapter 2, Pages 37 to 39	
	9	Terrain II	See readings in lesson	
	10	Election Mapping	See readings in Lesson	
	11	Summary and Trends in Cartography	See readings in Lesson	7. Nosara, Costa Rica Map

Quizzes

There are **six quizzes**. The purpose of these quizzes is to test your understanding of the material from the online lessons, textbook readings, AND labs covered. The quizzes will be open for you to take at your convenience. You may take each quiz only once. Once you begin a quiz, you will have to finish it in the designated time limit. You must take and submit each quiz before moving on to the next set of lessons and quiz. *Quizzes are open-note and open-text and you may consult both of these sources while taking the quiz.* **Be forewarned**, however, that having an 'open-book' quiz does not release you from studying! Quizzes are timed and if you are not prepared you will spend your time trying to find the answers.

Quizzes will consist of mostly multiple-choice, true/false, and some short answer and essay/calculation questions. All quiz questions are selected at random from a pool of questions. All answer options for each question are also ordered at random. Please take note that your quiz is unique and completely unlike any other student's quiz. Attempting to be dishonest on these quizzes is against University/course policy. You are expected to follow University policy on Academic Integrity.

Labs

In addition to the quizzes, you will also be required to complete **seven entirely online labs** and submit your answers in D2L by 11:59 p.m. (ET) on the date specified on the course schedule! Late responses are not accepted; you will receive 0 points. All of your lab grades will count toward your final-grade calculation.

As with any course, it is the responsibility of the Instructor to uphold the standards suggested by the grading rubrics provided by the course authors. While your grade is determined by assessing the quality of your lab answers compared to the grading rubric, the grading process is subject to the rigor of the Instructor.

The labs will be based on the lessons and textbook readings you have recently covered. Spelling and grammar will count toward your score for written answers. Any form or degree of plagiarism will NOT be TOLERATED and will result in 0 points.

Labs are independent exercises; you are not to collaborate with fellow students on them. The labs are designed to take approximately 2-4 hours to complete.

It is strongly suggested that you start your labs early so that you have enough time to ask your instructor any questions you might have.

Course Policies:
Course Material in D2L
From the D2L Help Page:

> "Know your rights and University Policy: MSU expects that you will respect the rights of faculty and other students as you participate in the educational process. Participating in an D2L course means that you may have access to personal information and academic work produced by other students and faculty members, such as discussion board postings, drafts of papers and other work produced in the course. **Academic norms and MSU policy require that you must not reveal any information about classmates, coursework, content, or its authors to anyone outside the course**."

ALL of our course material in D2L is copyrighted property of MSU. This means that ALL course material in the D2L course site is protected and, other than one copy of the material for your own personal use, this material should not be distributed or posted in any form.

Academic Integrity
You are expected to take this course in adherence to University and Department standards for Academic Integrity (The Office of the Ombudsman at Michigan State University). Please visit this site for a more detailed explanation of academic dishonesty and, especially, plagiarism -- two serious offenses from the viewpoint of onGEO, the Geography Department, and the University.

Grading:
Your *final grade* will be based on all of your *9 lab/activity* and *6 quiz scores*, on a **Pass (70% or higher) or Fail (below 70%)** basis. Here is the breakdown:

Lab	Quiz
Getting To Know You module	5 points
Activity 1. 5 points	Quiz 1: 20 points
Lab 1. 5 points	Quiz 2: 20 points
Lab 2. 30 points	Quiz 3: 20 points
Lab 3. 15 points	Quiz 4: 20 points
Lab 4. 15 points	Quiz 5: 20 points
Lab 5. 10 points	Quiz 6: 10 points
Lab 6. 10 points	
Lab 7. 20 points	**Total: 225 points**

We highly recommend that all labs and quizzes achieve a level that demonstrates mastery of the material (at least 70% of the total points per lab). Labs and Quizzes may be resubmitted once to achieve a satisfactory score.

You can view your grades for the labs and quizzes using your personal online gradebook (Assessments tab).

Extra Credit

Given the number of assessments and abbreviated length of the course, no extra credit work will be considered.

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Date	Lesson	Topic
Oct 24	-	Getting Started
Oct 24	-	Getting to Know You: module contents are *due by Tuesday, Nov 1*
Oct 24	-	Course Introduction
Oct 24	1	Introduction to Design
Oct 24	2	Map Design

F, Oct 26: *Activity 1. Remote-server Logon**
Quiz 1:   (Covers material from Lessons 1 and 2)
M, Oct 31: *Lab 1. Creating an Online Portfolio**

Oct 31	3	Typography I
Oct 31	4	Typography II

F, Nov 4: *Lab 2. Adobe Illustrator Tools and Objects**
Quiz 2:   (Covers material from Lessons 3 and 4)

Nov 7	5	Color in Cartography
Nov 7	6	Visual Variables

F, Nov 11: *Lab 3. Typography and Cartography**
Quiz 3:   (Covers material from Lessons 5 and 6)

Nov 14	7	Map Elements and Layout

Nov 14	8	Terrain I

F, Nov 18: *Lab 4. Cartographic Labeling**

Quiz 4:   (Covers material from Lessons 7 and 8)

Nov 21 -- Nothing is assigned or due this week -- have a nice Thanksgiving break!

Nov 28	9	Terrain II

F, Dec 2: *Lab 5. Map of Michigan I**

Dec 5	10	Election Mapping

F, Dec 9: *Lab 6. Map of Michigan II**

Quiz 5: (Covers material from Lessons 9 and 10)

Dec 12	11	Summary and Trends in Cartography

F, Dec 16: *Lab 7. Nosara, Costa Rica Map**

Quiz 6: (Covers material from Lesson 11)

* Labs are due by 11:59 PM (ET) on the due date provided.