GEOG 103: Geospatial Technologies and Society
Our Digital Planet/Mobile, Wired & Tracked
M/W 11:00 – 11:50 AM
Friday Online Replacement
Fall 2013 – Butte 329
Dr. LaDonna Knigge

Office Hours:
Tues 10:00 AM to 1:00 PM or by appointment

Course description:
With today’s digital technologies, we are constantly mobile, wired and tracked! Location-based services including personal navigation, GPS, web-based mapping services, and social networks with real-time location information are commonly part of our everyday lives. These technologies are not only ubiquitous in our personal lives, but they are essential to the functioning of government, industry and non-profit sectors. This course will explore the technologies and societal implications of our digital planet with particular attention to geospatial technologies that provide locational services, imagery, mapping and other capabilities. These technologies, ideally suited to analyze geographic patterns of sociological and environmental data, are rapidly evolving, with introductions of new applications every day.

This course provides an overview of evolving geospatial technologies, explores the impact of developments in geospatial technology on the individual and society, and questions how economics, politics, culture and values affect technological development. Through an examination of issues such as privacy, representation, geo-politics, surveillance, equity and social justice, students will obtain a better understanding of the benefits, challenges, ethics and risks of these technologies and will increase their awareness of their personal and societal implications.

Course format:
This course was designed using NCAT Replacement Model (http://thencat.org/PlanRes/R2R_ModCrsRed.htm). Rather than the typical M/W/F fifty minute class format, we will only physically meet in Butte 329 on Mondays and Wednesdays. The Friday class will be replaced with out-of-class activities such as videos, podcasts, readings with online discussion and other exercises. Mondays may include in-class discussion of replacement activities.

Through readings of both academic and popular literature, videos, internet research, discussions and activities using a variety of readily available technologies, students will investigate what it means to be a citizen of our digital planet. The course will highlight critical thinking skills, active inquiry, personal and social responsibility and creativity. Students will be expected to use a variety of media and methods of inquiry, research and presentation throughout the semester to understand, internalize and synthesize the course materials.

This course is designed to fulfill a requirement in Area D1 of General Education.

General Education:

Geography 103 is one of the nine courses that students can take to fulfill their General Education Breadth requirements. This course is part of Area D1: Behavioral and Social Sciences: Individual and Society. Underlying all the University’s programs is the conviction that an educated person is one who knows that which is important for all people to know. Courses required for your major may prepare you for your vocation; the General Education program provides you the integrative intellectual experience common to all Chico graduates.

Underlying all the University's programs is the conviction that an educated person is one who knows that which is important for all people to know. General Education (GE) will help you to see your major’s place in your total education by showing you that knowledge is not isolated, that what you know of one subject is related to what you know of another, that there is always more to know, and that what you know affects the way you live. By suggesting the essential unity and wholeness of knowledge, GE
counteracts the sense of fragmentation you may feel while studying bits and pieces of issues and information through the various colleges, schools, and departments of the University.

You, like many new students, may be uncertain about your choice of a major or career field. Thus, in addition to the primary goal of broadening your awareness and understanding, an early focus on GE may help you become better acquainted with yourself and discover and deepen your interests and abilities in various academic disciplines and programs. If you are undeclared or uncertain about your major, carefully review programs you are considering, taking note of required GE courses and modifications. The Evaluations or Advising and Orientation Offices can help you plan your GE program in such a way that you take full advantage of GE as a powerful career exploration tool. (Source: 2011-2012 University Catalog http://catalog.csuchico.edu/11/GENED.html)

If you are interested in a major in Geography and Planning, please explore our department website at http://www.csuchico.edu/geop and come see me or other members of the department faculty for advising.

**Learning objectives and course content:**

#1 Students will articulate how geospatial technologies allow for new ways to study, evaluate, describe and interact with geographic representations and perception of places at multiple scales. [GE SLO 3 Critical Thinking; GE SLO 5 Active Inquiry]

#2 Students will communicate trends in society and the environment that have influenced the development of geospatial technologies by critically evaluating and describing the technology of social networking and globalization. [GE SLO 6 Personal & Social Responsibility; GE SLO 10 Global Engagement]

#3 Students will demonstrate critical thinking in evaluating geospatial technologies as they relate to issues of ethics (including privacy and legal issues, surveillance, cultural difference and appropriateness) and social and environmental justice for under-represented and at-risk populations across the planet. [GE SLO 8 Diversity]

#4 Students will critically evaluate the individual and societal impacts of geospatial technologies on themselves, their communities and the wider society in relation to policies and both re-enforcement or challenges to power structures within society. [GE SLO 6 Personal & Social Responsibility; GE SLO 3 Critical Thinking]

**Course Materials**

You must have internet access for this course. You will download Google Earth™ and other web-based mapping programs and sources of data throughout the course of the semester. We will be using Blackboard Learn (BbL) Learning Management System. Because of the reduced in-class meetings, it will be important to check BbL frequently.

- **Required Text:**


NOTE: There are several options for purchasing this book. You will only be required to read and complete activities from Chapters 1, 2, 4 and 13, so I have created a custom version that can be purchased instead of the entire book. If you choose the option to purchase the custom version (Chap 1, 2, 4 & 15), the fee is $35.00 and you must complete the forms as shown below.

Shellito, Bradley A. 2012. GEOG 103: *Our Digital Planet: Geospatial Technologies & Society Basic Concepts* - Custom Version of *Introduction to Geospatial Technologies* eBook. Custom Version 7713291 Student price: $35.00 (Chapters 1, 2, 4, and 15)

Link to purchase online version on BbL side bar:

http://ebooks.bfwpub.com/shellito1e.php?logout
You may choose to purchase the hard copy, a used copy or the full e-Book, but please note that you are only required to read and complete exercises in Chapters 1, 2, 4 & 15.  [http://www.whfreeman.com/Catalog/product/introductiontogeospatialtechnologies-firstedition-shellito/formatandsandpackages](http://www.whfreeman.com/Catalog/product/introductiontogeospatialtechnologies-firstedition-shellito/formatandsandpackages)

**Course Evaluation and Grading:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands-on Application Exercises, discussion</td>
<td>8 at 10</td>
</tr>
<tr>
<td>board or activity (6 on syllabus)</td>
<td>points each</td>
</tr>
<tr>
<td>Lab Applications</td>
<td>4 @ 25</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>points each</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100 points</td>
</tr>
<tr>
<td>Attendance and Participation</td>
<td>20 points</td>
</tr>
<tr>
<td>Total points</td>
<td>400 points</td>
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**Grading will be based upon the following scale:**

<table>
<thead>
<tr>
<th>Percent</th>
<th>Letter Grade</th>
<th>Percent</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>95-100</td>
<td>A</td>
<td>74-76</td>
<td>C</td>
</tr>
<tr>
<td>90-94</td>
<td>A-</td>
<td>70-73</td>
<td>C-</td>
</tr>
<tr>
<td>87-89</td>
<td>B+</td>
<td>67-69</td>
<td>D+</td>
</tr>
<tr>
<td>84-86</td>
<td>B</td>
<td>64-66</td>
<td>D</td>
</tr>
<tr>
<td>80-83</td>
<td>B-</td>
<td>60-63</td>
<td>D-</td>
</tr>
<tr>
<td>77-79</td>
<td>C+</td>
<td>&lt;60</td>
<td>F</td>
</tr>
</tbody>
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**Course content:**

**Part 1: Introduction to Our Digital Planet: Foundations of Geospatial Technologies**

1. Introduction: It’s a Geospatial World Out There: Defining Geospatial Technologies
   a. Internet, distributed data and the cloud
   b. Geospatial technologies today (industries, careers, and jobs)

2. Geographic Representation
   a. Spatial perceptions, cartographic representation and conventions
   b. Virtual environments
   c. History of GIS
   d. The role of geography in understanding our Digital Planet
   e. Critical thinking and critical assessment of map content

3. Basics of Geospatial Technologies
   a. Earth properties: location, coordinate systems, map projections
   b. Global Position System (GPS)
   c. Geographic Information Systems (GIS)
   d. Satellite imagery
   e. Spatial Data Infrastructure (SDI):
   f. Internet-based or web-mapping services and location-based services (LBS)

**Part 2: Societal Implications of Geospatial Technologies**

4. The Geospatial Web
   a. The Geospatial Web & Web 2.0
   b. User-generated content (UGI)
   c. Voluntary Geographic Information (VGI)
   d. Mashups

5. Crowdsourcing and crisis management
   a. Natural disasters
   b. Crowdsourcing
   c. weather, climate
   d. Remotely sensed agricultural data
   e. Internet, wikis, distributed data and the cloud

6. Geo-Political Concerns
a. Digital planet and the exercise of the State power (hegemonic cartography)
b. Representation of contested territory
c. Geospatial intelligence
d. The surveillant society
e. Supreme Court GPS ruling, Counter-terrorism policies

7. Social Implications: Under-represented populations
   a. Bridging the digital divide
   b. Contested spaces and counter-mapping
   c. Participatory GIS
   d. Legal application for land rights claim
   e. Social, environmental and spatial justice
   f. Appropriate technology

8. Societal Implications of Our Digital Planet
   a. The bleeding edge of technology: managing your digital profile – How to avoid getting cut!
   b. Internet (access to digital data) vs. Web (community, exchange, sharing)
   c. Spatial privacy
   d. Geo-social media: turning Facebook© into “Placebook”
   e. Wikis for updating photos, locations, descriptions
   f. Economy of geospatial technologies

9. Applications and Implications of Our Digital Planet
   a. Population and social welfare
   b. Political and electoral maps
   c. Environmental and public health
   d. Planning and infrastructure

10. The future of Our Digital Planet
    a. GIS & Education
    b. Careers in geography & GST

– Selected readings. Other readings videos, exercises and activities will be made available throughout the semester, either online, in digital or pdf format or other formats, including:


Classroom Collegiality and Expectations

We will discuss classroom conduct at the beginning of class and revisit the topic periodically throughout the semester. Please see me if you have issues with classmates’ behavior (side conversations, laptop, cell phone or other technology usage). The classroom should be a safe place where all ideas can be expressed freely and openly, as long as they do not include bigotry, intolerance or hatred. Please listen to me and to other students, and frame your commentaries in the spirit of supportive and constructive criticism. Use non-sexist language when speaking and writing.

If you have a documented disability that may require reasonable accommodations, please contact Accessibility Resource Center formerly known as Disability Support Services (DSS) for coordination of your academic accommodations. The ARC phone number is 898-5959 V/TTY or FAX 898-4411. Visit the ARC website at http://www.csuchico.edu/arc/

Add/Drop information: Students are responsible for handling the paperwork for adding or dropping this class. After September 7th you will need special permission of instructor to add or drop classes. After September 21st (Census Date) you will need a compelling reason to add or drop any courses. If the class is full and you wish to add, please see me after class or during office hours.

Academic Honesty Policy: Please see policies regarding plagiarism, taking and providing information, misrepresentation and academic integrity contained in Student Judicial Affairs: http://catalog.csuchico.edu/viewer/12/STUDJUDAFFAIRS.html and as contained in the 2012 University Catalog: http://catalog.csuchico.edu/viewer/12/UNIVPOL.html

Links of interest:


Full eText: http://whfreeman.com/Catalog/product/introductiontogeospatialtechnologies-firstedition-shellito

CourseSmart signin: http://instructors.coursesmart.com/bookshelf

Shellito student companion site: http://bcs.whfreeman.com/shellito1e/


World Map: Harvard Site to explore, visualize and publish geographic information: http://worldmap.harvard.edu/

ESRI GIS Glossaries: http://www.esri.com/what-is-gis/overview.html#glossaries_panel


Geocommons: http://geocommons.com/

ArcGIS online: http://www.esri.com/software/arcgis/arcgisonline/


Free Geography Tools Website: http://freegeographytools.com


US Census Bureau: http://www.census.gov/#
<table>
<thead>
<tr>
<th>Unit</th>
<th>Dates</th>
<th>Topic</th>
<th>Due Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug 26 – Sept 2</td>
<td>Introductions, overview of course; Role of geography &amp; GST in addressing concerns of a changing planet</td>
<td>See BbL for #1 Friday replacement (FR) discussion questions due 9/4</td>
</tr>
<tr>
<td>2</td>
<td>Sept 4 - 9</td>
<td>It’s a Geospatial World Out There! What is geospatial(GST) data. Intro to Google Earth Chap 1 Shellito</td>
<td>FR #1 due Wed 9/4 in class FR #2 assignment Due Mon 9/9</td>
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<tr>
<td>4</td>
<td>Sept 18 - 23</td>
<td>The Digital Earth: Understanding Our Planet in the 21st Century</td>
<td>FR Shellito Lab 1 (FR Lab #1) Due Mon 9/23</td>
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<tr>
<td>5</td>
<td>Sept 25 – 30</td>
<td>Where in the geospatial world are you? Chap 2 Shellito</td>
<td>FR Shellito Lab 2 (FR Lab #2) Due Mon 9/30</td>
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<tr>
<td>7</td>
<td>Oct 9 - 14</td>
<td>Shellito Chap 4: pg 77 -end: Finding your location with GPS; GIS for crisis management: crowdsourcing w/social media, environmental &amp; health applications</td>
<td>FR #4 Cholera mapping Exercise due 10/14</td>
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<tr>
<td>8</td>
<td>Oct 16 - 21</td>
<td>Internet, distributed data and the cloud, Citizens as sensors, spatial privacy &amp; your digital profile Midterm Exam Monday Oct 21st</td>
<td>FR Podcast: “The Internet is a Series of Tubes” Study for Midterm</td>
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<tr>
<td>10</td>
<td>Oct 30 – Nov 4</td>
<td>Contested territories, hegemonic cartography, Political &amp; electoral maps; Indigenous GIS</td>
<td>FR Lab #3 Historical Rumsey Map Collection Mapping Lab due 11/4</td>
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<tr>
<td>11</td>
<td>Nov 6 – 11+ +No class Nov 11 – Veterans</td>
<td>Digital Nation Video</td>
<td>FR #5 Digital Nation discussion questions</td>
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<tr>
<td>12</td>
<td>Nov 13 - 20</td>
<td>GIS &amp; Society: Under-represented populations; bridging the digital Divide; Participatory, critical &amp; feminist GIS; social, environmental &amp; spatial justice</td>
<td>FR #6 Participatory GIS video (Sarah Elwood) Commentary of Participatory GIS video due Mon 11/18</td>
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<td>BREAK</td>
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<td>Enjoy your Thanksgiving Holiday Nov 25-29</td>
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<tr>
<td>13</td>
<td>Dec 2 - 6</td>
<td>The economy of geospatial technologies: Location-based services, the economy of the digital planet; GST business applications; careers in GST</td>
<td>FR Lab #4: ESRI Spatial Lab due Mon 12/9</td>
</tr>
<tr>
<td>14</td>
<td>Dec 9 - 13</td>
<td>What’s next for geospatial technologies? Shellito Chap 15</td>
<td>FR Lab #4 due Mon 12/9</td>
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<tr>
<td>FINALS</td>
<td>Dec 16-20</td>
<td>Final Exam Monday Dec 16 12:00 – 1:50</td>
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NOTE: Schedule is subject to change at Professor’s discretion. Effective Date 8/25/2013