Syllabus for
GSS 313 GIS Design and Application I
Spring 2013

Class meets: Tuesday and Thursday 5:30 pm – 6:50pm

Instructor: Maria Brown, MS, PWS
Mobile Phone: 631-244-6722
Email: maria.brown@stonybrook.edu

Course Description:
Provides the basic concepts underlying modern geographic information science and technology. Emphasis is placed on the principles of GIS for characterizing environmental systems and computer-based techniques for processing and analyzing spatial data. The course is three credit hours of lecture. This lecture course must be taken in the same semester as the associated laboratory, GSS 314.

Prerequisite: MAT 125 or MAT 131

Stony Brook Curriculum: Understanding Technology (TECH)

Additional Course Information:
You will be given opportunities to process, analyze, and visualize spatial data and information using commercially-available GIS software. As a result you will gain an appreciation for the complexities of data manipulation, analysis, and mapping at different scales of space and time. The course includes six hours of in class lecture, exercises and projects each week. This is a computer and project-based course with the majority of student work involving GIS computer software. Other software applications used in this course include Excel, PowerPoint, and Google Earth. This course utilizes a PC platform; all MAC users who choose to use their laptops, must have Bootcamp installed.

Expected Student Outcomes:
● Explain the diversity and range of GIS software applications
● Demonstrate knowledge of history and information resources
● Describe elements of mapping for specific man-made and natural applications
● Differentiate types of data and metadata
● Produce simple maps that display elements of the human-made and natural world
● Explain the method of using data from GIS and Remote Sensing (vector and raster datasets)
● Demonstrate querying techniques, searches and spatial analysis
● Evaluate GIS software for practical usage and application

Required Text(s)
- ESRI Trial Software is available for this course and can be obtained from the instructor. A code to download the software will be emailed to you. This software is the foundation for the course; this will allow you to work at home with the software. Note: ArcGIS software will only run on a PC or MAC running Bootcamp (PC emulation). Tentative Course Schedule can be found within this document AND in Blackboard under “Proposed Schedule”

**Grading:**

**Attendance/Participation (in-class) (20%)**

**Online Discussion Board Participation (10%)**

In this class Discussion Boards will be a formal graded assignment. Within the Discussion Board I will establish a number of topical Forums where you will participate for a grade. Each of these Forums will have one or more leading questions and you will create a new thread for your response. Additionally, you will be asked to comment on one or more of your classmates’ threads. Responses should be critical and supported. That is does not mean degrading, but critical in the sense of exploring the positive or negative aspects of the comment, and then supporting your agreement or disagreement based on geologic information.

**Homework/Class Assignments: (20%)**

Homework Assignments & Challenge Problems will focus on re-enforcement of text chapter readings and tutorial content as well as problem solving and utilization of ArcGIS tools. MOST, but NOT all assignment submission close in Blackboard at 11:59pm on the due date. You must ALWAYS check the time the assignment is due. The ability to upload after the due date will not be permitted. LATE Assignments WILL NOT be accepted in this course. There are a few opportunities throughout the course to complete a “Homework Replacement Assignment”.

**Online Quizzes (10 %)** will be given for many chapters online immediately following the completion of each chapter. Text book and GIS online may be used.

**Midterm Project Plan (15%)**

**Final Project: (25%)** A PowerPoint Presentation will be required and must be uploaded to Blackboard NO LATER than April 30th (MIDNIGHT). Project Grading Rubric and Instructions will be posted on Blackboard.

**Basis for grading:** 100-95 (A); 94-91 (A-); 90 – 88 (B+); 87 – 84 (B); 83-81 (B-); 80-78 (C+); 77-74 (C); 73-71(C-); 70-68 (D+); 67-60 (D), <60 (F).

**Tentative Schedule:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
</table>
| Jan 24 | GIS Introduction  
Loading ArcGIS software | ArcGIS 10 Resources |
| Jan 26 | Introduction to ArcGIS Project  
Introduction to GIS | |
<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 31</td>
<td>Coordinate Systems</td>
<td>Ch 1</td>
</tr>
<tr>
<td>Feb 2</td>
<td>Project examples</td>
<td></td>
</tr>
<tr>
<td>Feb 7</td>
<td>Mapping GIS Data</td>
<td>Ch 2</td>
</tr>
<tr>
<td></td>
<td>Intro to GIS Help</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intro to GIS Online</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intro Metadata/Geodatabases</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Project Examples</td>
<td></td>
</tr>
<tr>
<td>Feb 9</td>
<td>Attribute Data/ Mapping GIS Data/ Project Plan Development</td>
<td>Ch 4</td>
</tr>
<tr>
<td>Feb 14</td>
<td>Project Plan Development</td>
<td></td>
</tr>
<tr>
<td>Feb 16</td>
<td>Project Plan Development</td>
<td></td>
</tr>
<tr>
<td>Feb 21</td>
<td>Presenting GIS Data/ Project Plan Development</td>
<td>Ch 3</td>
</tr>
<tr>
<td>Feb 23</td>
<td>Project Plan Development</td>
<td></td>
</tr>
<tr>
<td>Feb 28</td>
<td>Queries/ Project Plan Development</td>
<td>Ch 5</td>
</tr>
<tr>
<td>March 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 6</td>
<td>Spatial Joins/Project Plans</td>
<td>Ch 6</td>
</tr>
<tr>
<td>March 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 13</td>
<td>Geoprocessing</td>
<td></td>
</tr>
<tr>
<td>March 15</td>
<td>Project Plans</td>
<td></td>
</tr>
<tr>
<td>March 20</td>
<td>Metadata Sheets Review</td>
<td></td>
</tr>
<tr>
<td>March 22</td>
<td>Locating Maps and Creating Layers for Project</td>
<td></td>
</tr>
<tr>
<td>March 27</td>
<td>Raster Analysis</td>
<td>Ch 7</td>
</tr>
<tr>
<td>March 29</td>
<td>Locating Maps and Creating Layers for Project</td>
<td></td>
</tr>
<tr>
<td>March 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April 3</td>
<td>SPRING BREAK</td>
<td>Ch 10</td>
</tr>
<tr>
<td>April 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April 10</td>
<td>Geocoding</td>
<td>Ch 11</td>
</tr>
<tr>
<td>April 12</td>
<td>Coordinate Systems</td>
<td></td>
</tr>
<tr>
<td>April 17</td>
<td>Basic Editing</td>
<td>Ch 12</td>
</tr>
<tr>
<td>April 19</td>
<td>Editing Maps for Project</td>
<td></td>
</tr>
<tr>
<td>April 24</td>
<td>Advanced Editing/Project Review Sessions</td>
<td>CH 13</td>
</tr>
<tr>
<td>April 26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May 1</td>
<td>Final Exam Presentations begin at 5:30 Room 081</td>
<td></td>
</tr>
<tr>
<td>May 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Blackboard**

You can access class information, documents, and assignments on-line at:
http://blackboard.sunysb.edu  If you used Blackboard during the previous semester, your login information (Username and Password) has not changed. If you have never used Stony Brook's Blackboard system: for help or more information see:
http://www.sinc.sunysb.edu/helpdesk/docs/blackboard/bbstudent.php  For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site , you can also call: 631-632-9602 or e-mail: helpme@ic.sunysb.edu
Student’s Responsibility: Ensure you have entered a working email account in your Black Board account. Access your BB account and make sure that you have access to this class, send
yourself a test email using the email option within BB. Adhere to deadlines for term paper and
other assignments. Adhere to the formatting instructions for the term paper. Seek help from
instructor when problems arise. Should you have a disability follow the regulations spelled out
below so that it can be evaluated as soon as possible.

Cell Phone and Electronic Devices: Use of cell phones, blackberries, laptop computers, iPods,
MP3 players, and other audio and telecommunications devices is strictly prohibited during
class. The only exceptions are through permission granted by the instructor for special
purposes. Clickers are excluded from this prohibition, if required for the class. During regular
class sessions, cell phones must be either in ‘vibrate mode’ or turned off. Calls cannot be
answered. Text messaging is not allowed during class. Cell phones must be turned off and
enclosed in a case, book bag, briefcase, or the like during tests and exams. YOU are
responsible for ensuring this policy is followed. Students MAY NOT have cell phones,
电子 dictionaries, calculators, pagers or other “information rich” devices (anything that
can receive and/or store many pages of text) in their possession during tests and exams.

Academic Dishonesty Policy: Academic dishonesty is a serious offense and a breach of
academic integrity that may result in failure of the course or failure for the individual paper or
assignment. The “Code of Student Conduct” states that all forms of academic dishonesty,
including the following are prohibited (see student handbook):

- Plagiarism – the intentional use of ideas or words of another as one’s own paper or other
  academic assignments. If you are unsure of what constitutes Plagiarism visit this
document http://www.wpacouncil.org/positions/WPAplagiarism.pdf or ask the
  instructor.
- Cheating during examinations, whether by copying from a fellow student or by using
  information in the form of unauthorized aids brought to the examination.
- The submission of work for any assignment that has been prepared by another student.

Academic Integrity Statement:
Each student must pursue his or her academic goals honestly and be personally accountable for
all submitted work. Representing another person's work as your own is always wrong. Faculty
are required to report any suspected instances of academic dishonesty to the Academic
Judiciary. Faculty in the Health Sciences Center (School of Health Technology &
Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required
to follow their school-specific procedures. For more comprehensive information on academic
integrity, including categories of academic dishonesty, please refer to the academic judiciary
website at http://www.stonybrook.edu/uaa/academicjudiciary/

Classroom Policy: Students are expected to follow the Stony Brook Code of Conduct while in
the classroom. If you are not familiar with the Code you can find it at:
http://studentaffairs.stonybrook.edu/sites/handbook/Code_1-22-03.pdf
Behavior that is disruptive to the function of the class, other students, or the instructor will not
be tolerated. Poor class behavior or violations to the Code of Conduct will lead to removal
from the class, possible withdrawal, or suspension. Food is not permitted in class. Beverages are OK, but please bring a container the can be closed to reduce spills. If a spill occurs please clean it up immediately.

**Instructional Responsibilities:** The University's statement of *Minimal Instructional Responsibilities* and *Minimal Undergraduate Student Responsibilities* are protocols with which you may already be familiar. They were established by the University Senate in 1996. If you have not already done so, please review them carefully. Both statements may be found beginning on page 81 of the *Academic Policies and Regulations* section of the on-line *Undergraduate Bulletin:* [http://www.stonybrook.edu/ugrbulletin/current/index.shtml](http://www.stonybrook.edu/ugrbulletin/current/index.shtml)

**DISABILITY SUPPORT SERVICES (DSS) STATEMENT**
If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: [http://www.stonybrook.edu/ehs/fire/disabilities](http://www.stonybrook.edu/ehs/fire/disabilities)

**CRITICAL INCIDENT MANAGEMENT:**
Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

**Course Content:**
Course material accessed from Blackboard, SB Connect, SB Capture or a Stony Brook Course website is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder.

Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity and Student Conduct Codes [http://www.stonybrook.edu/uaa/academicjudiciary/policies.shtml](http://www.stonybrook.edu/uaa/academicjudiciary/policies.shtml)

**Electronic Communication Statement**
Email and especially email sent via Blackboard ([http://blackboard.stonybrook.edu](http://blackboard.stonybrook.edu)) is one of the ways the faculty officially communicates with you for this course. It is your responsibility to make sure that you read your email in your official University email account. For most students that is Google Apps for Education ([http://www.stonybrook.edu/mycloud](http://www.stonybrook.edu/mycloud)), but you may verify your official Electronic Post Office (EPO) address at
http://it.stonybrook.edu/help/kb/checking-or-changing-your-mail-forwarding-address-in-the-ep
Ω.

If you choose to forward your official University email to another off-campus account, faculty
are not responsible for any undeliverable messages to your alternative personal accounts. You
can set up Google Mail forwarding using these DoIT-provided instructions found at
http://it.stonybrook.edu/help/kb/setting-up-mail-forwarding-in-google-mail.

If you need technical assistance, please contact Client Support at (631) 632-9800 or
supportteam@stonybrook.edu.