GEOG 583 Internet Mapping and Distributed GIServices  
Website ⇒ http://map.sdsu.edu/geog583 (Spring 2007)

Lectures: Thur. (I) 12:30pm - 1:40pm, (II) 2:00pm-2:50pm  
Location: Storm Hall 248(I), 338(II)
Labs: Thur. 3:00pm - 4:40pm  
Lab room: Storm Hall 338

Instructor: Dr. Ming-Hsiang Tsou  
Storm Hall 326  
mtsou@mail.sdsu.edu
Office Hours: Monday 4:00pm- 5:00pm  
Tuesday 4:00pm- 5:00pm  
or by appt. (619) 594-0205

Overview: This course introduces current development of Internet mapping and advanced cartographic skills in Web-based maps. By using Web-authoring tools (Frontpage XP) and Internet Map servers (ESRI ArcIMS, ER Mapper Image Web Server, and INTERGRAPH’s GeoMedia WebMap Server), students can learn both the techniques of Internet mapping and the principles of interactive cartography, including multimedia, animation, and user interface design. The lectures will focus on the theories and principles behind the Internet mapping, including distributed component technologies, graphic designs, and network communications. The lab exercises will focus on the practical applications and Web design skills for Internet map servers. Students will learn how to design and set up an Internet Map Server and to publish their Web maps on the server.

Prerequisites: GEO 380 or GEO381 or GEO484 or Web design experiences.

Textbook (required):  

Lectures: The lectures will focus on the theories and principles behind the Internet mapping and distributed GIServices. There are two sessions for the lecture part. The first session (I) will focus on the theories and principles of Internet Mapping and distributed GIServices. The second session (II) will focus on the actual web authoring skills and software configuration with Internet connection.

Lab Exercises: The lab exercises will focus on the practical installation and web design training for Internet map servers. Students must attend each lab session. Lab exercises focus on the training of Internet Mapping skills by using FrontPage software, and ArcIMS GIS package.

Grading: Midterm exam 25%, Lab exercises 40%, Group project and Web design 30%, Class participation (assignments) 5%.

Graduate students will have an additional assignment (literature review in their specialty areas with the Internet application). Additional 10%. The literature review will ask the students to gather the following information:
1. Find out TWO web sites which focus on your own special areas (hydrology, urban geography, etc.), and write a few paragraphs to introduce the web site in HTML format. (Put the results on your assigned Web page).
2. Write an essay about the impact of Internet on your own specialty group and identify the potential connections of the Internet applications with your own study area. (two or three pages and put the essay on your Web page).
(Graduate student assignment due day is May 3, 2007 – one week before the final presentation).

Additional Readings: (electronic copies in the Z:/data/readings/ drive)


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<th>LECTURE</th>
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<tr>
<td>1</td>
<td>18 Jan</td>
<td>Introduction</td>
<td>Butler.</td>
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<td>2</td>
<td>25 Jan</td>
<td>History of Internet and Web Mapping</td>
<td>Putz, Book: Ch. 1.2</td>
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<td>3</td>
<td>1 Feb</td>
<td>Cartography and User Interface Design</td>
<td>MacEachren</td>
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<td>4</td>
<td>8 Feb</td>
<td>Software Architecture</td>
<td>Tsou (2004) Book: Ch.3, 4</td>
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<td>5</td>
<td>15 Feb</td>
<td>Multimedia and Hypermedia</td>
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<td>6</td>
<td>22 Feb</td>
<td>Software Solution Key Technologies</td>
<td>Gosling Book: Ch.5</td>
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<td>7</td>
<td>1 Mar</td>
<td>Visualization/ HCI (Introduction to Group Project)</td>
<td>Book: Ch.6</td>
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<td>8</td>
<td>8 Mar</td>
<td>Distributed component technology Group Project Proposal Presentation</td>
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<td>9</td>
<td>15 Mar</td>
<td>Virtual Reality and 3D Cartography Exam Review</td>
<td>OpenGIS, Book: Ch. 8</td>
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<td>10</td>
<td>22 Mar</td>
<td>Midterm EXAM (25) (exam: 12:30-1:20). Class meet at 2:00pm-4:00pm – Mobile GIS and Wireless communication</td>
<td>ArcIMS Manager and Tools Group proj.</td>
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<td>12</td>
<td>5 Apr</td>
<td>User Profile and Web site Evaluation</td>
<td>Limp</td>
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<td>13</td>
<td>12 Apr</td>
<td>New Media (Virtual Globes) and New Technology (AJAX)</td>
<td>Ch. 10</td>
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<td>14</td>
<td>19 Apr</td>
<td>(AAG Meeting) No Class</td>
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<td>15</td>
<td>26 Apr</td>
<td>Intelligent GIServices and Semantic Web</td>
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<td>16</td>
<td>3 May</td>
<td>Future Direction of Internet GIS Graduate Student Additional paper due</td>
<td>Book: Ch. 14</td>
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<td>17</td>
<td>10 May</td>
<td>Group Project Presentations (338) - as the Final Exam (2:00pm-5:00pm)</td>
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<td>15</td>
<td>15 May</td>
<td>Submit the Final Report by Noon</td>
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Group Project:

Two or three students will form an “Internet Mapping project team”. Each group will submit one page proposal on March 8, 2007 and choose a possible project topic. Each team will select a team coordinator, who will coordinate the work progress of your project. The proposal will list the following items in a single page:

- The title of your project,
- Members’ names,
- Coordinator’s name,
- One paragraph to explain your project (200-300 words), and
- Weekly schedules and individual assignments.

Each team will spend five minutes to introduce their project to the class on March 8.

Each team will give a brief group project progress report (two minutes) at the beginning of lecture each week (after March 8).

At the end of semester, each team has to submit an “Internet Mapping project final report” in paper format and publish the result to group project web pages. The whole team members will present your project in front of the class as the final exam. The final report presentation will be held in May 10 from 2:00pm - 5:00pm in SAL lab (SH338). Each team has 15 minutes for presentation and 5 minutes for questions. (If you need to use the Powerpoint slide, save the slide in a floppy disk or send it to mtsou@mail.sdsu.edu before your presentation.) The contents of your presentation should follow your group report. (Everyone are required to attend the presentation classes and sign-up your name). The final report (paper format) is due on the May 15 (Tuesday) at noon in the instructor’s mailbox (TSOU).

The Final report should include:

**Group report** (10-15 pages, double space, submit by each group) should include the following items:
- Team members
- Problem statement (why are you doing this project? why Internet mapping?)
- Literature review (other similar projects or fundamental theories – scientific journals or on-line resources)
- Database management and ArcIMS setup (where do your data sets come from? Where do you put them on the Web and which version of ArcIMS do you use?)
- Results (introduce your web design and published data)
- Discussion

**Individual report** (3-5 pages, double space, submit by individuals):
- The major accomplishment of your group project.
- Your own contribution to the project
- What do you learn from this project?
- Your suggestions for the project (If you can re-do this project, which part of the project would you improve?)

**Grading:**

Final presentation 15%, Web Design 25%, Group project report 40%, Individual report 20%. 