American Public University System

The Ultimate Advantage is an Educated Mind

School of Security and Global Studies
INTL432
Geographic Information Systems I
Credit Hours: 3
Length of Course: 8 Weeks

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Instructor Information

Instructor: Name and link to bio

Office Hours via Adobe Connect: [1 hour/wk if teaching one course, 2 hours/wk if teaching 2+ courses], and by appointment.

Please contact your instructor through the Messages tab in the classroom.

After the class is over, instructor contact information:
@mycampus.apus.edu.

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Course Description (Catalog)

INTL 432 – Geographic Information Systems I (3 hours)

Geographic Information Systems (GIS) contain a powerful set of tools for data acquisition, management, query and display. This course will provide students with a substantial foundation of skills to merge both theoretical and applied information with hands-on practical training utilizing the basic tools provided with the GIS software. Students will become familiar with the importance of metadata, editing and updating metadata and how this is important to the success or failure of the dataset as a whole."

Course Scope

This course is 8 weeks, but with the amount of work in both hands-on and via readings it is going to fly by! We will cover the basics of GIS via ESRI ArcMap software, its basic functions and tools, and apply them in the practical hands-on exercises in the weekly labs. Since our medium of instruction is interaction via the Internet, creative and productive use of the worldwide web is integral to all our efforts together in this course. Students are strongly encouraged to support each other in addition to instructor support in this course, make study dates, meeting times in chat rooms, et cetera.

Course Objectives

This course is designed contribute to student's short and long term educational goals while ensuring students obtain the knowledge and skills outlined in this syllabus. Students need to establish a functional educational relationship between themselves and the instructor as well as a synergistic interface amongst the entire class. Do this through using all relevant features of the present Sakai Learning Management System and maintaining a supportive and collaborative learning experience bolstered by courtesy and respect.

Much of your grade for this course will be based upon the demonstrated mastery of goals outlined in the schedule below. Generally speaking, this program of instruction will offer students the opportunity to learn about spatial relationships among physical and/or human elements. In the real world, this can often be very confusing and overwhelming because it is difficult to mentally incorporate all the factors that may influence a decision or action. ArcGIS presents students with a way to incorporate, manage and visually display a list of confusing

factors into a convenient and easy-to-understand media: The map. Therefore, by the end of this course, students should have a <u>solid understanding</u> of how to import, manage, analyze, and display answers to spatial research questions using ArcGIS software. Where possible, the military intelligence applications of our weekly work together will be emphasized, although focus will also be made on governmental and commercial applications as the opportunities arise. The successful student will be prepared to complete the following learning objectives:

CO-1: Demonstrate the skills to lay out, save, and export geospatial maps using the Toolwire virtual lab using the Esri Geographic Information Systems (ArcMap) software Version 10.1.

CO-2: Explain the value of objective analytic tradecraft to spatial problem sets.

CO-3: Apply ArcCatalog data as layers to a map.

CO-4: Implement basic ArcGIS functions relating to databases, layers, labels and features.

CO-5: Articulate how to assess data from multiple sources in terms of its usefulness, accuracy, and potential for application into an ArcGIS project.

CO-6: Understand the wide uses of GIS to address many of society's problems.

CO-7: Explain how GIS supports national security and law enforcement objectives.

Course Delivery Method

Instructional Approach and Course Requirements

This intelligence studies course delivered via distance learning will enable students to complete academic work in a flexible manner, completely online. Course materials and access to an online learning management system will be made available to each student. **Lab assignments are due by the last day of the stated week** and include Forum questions (accomplished in groups through a threaded discussion board), and practical exercises (Assignments 1 – 3). Assigned faculty will support the students throughout this eight-week course. Submit the Forums relative to the readings the week they are assigned, try not to wait until Sunday.

Successful completion of this course will require extensive reading each week, weekly interactions on our Forums, Lab activities using the ArcGIS software (both from the Lab Work Book & the three Assignments). You must complete the assigned readings and hands-on Lab exercises (textbook and any articles) due at the end of each instructional week.

Forums: We can learn as much from each other as we will from the material. The purpose of the weekly discussion questions is to facilitate our getting to know one another and sharing our thoughts about the weekly readings, activities and discussion topic in the Lab or otherwise. Forum participation is 25% of your final grade. In order to achieve maximum credit for your initial Forum the post will reflect having thoroughly read and thought about the topic of the week; consisting of 250 words or more. You should also respond each week to at least two of your classmates with your responses being of 150 words or more each. Weekly Forum questions (accomplished in groups in a Forum) require an initial response by Thursday at 11:55 pm ET, with all other required responses due by Sunday at 11:55 pm ET.

Weekly Deliverables: Weekly students are expected to submit (1) a substantive discuss on the topic in the Weekly Forums and respond to other student comments to the posted forums in our classroom, and (2) written or lab exercises that are cumulative, that when combined comprise most of the next graded exercise found in Assignments. On occasion the forum and lab are combined as a single graded submission as a forum discussion. Specific directions are in the Lab and Forum material.

Graded Assignments: There are three graded assignments. These are practical exercises worth 75% of your grade, so it is critical to read and follow directions as well as do the weekly exercises in the Lab Work Book. Assignments are due by Sunday at 11:55 pm ET and include all required material submitted for grading.

Exams: There are no exams.

Course Materials

Required Texts

Gregory Newkirk and Trevor Perkes. *Gaining Competency with GIS: How to Manual for ArcGIS Desktop Version 10.* March 16, 2012. **E-Book link available inside the classroom and APUS Online library.**

Please visit http://apus.libguides.com/er.php and search by the course number (ex: LITR210) to access your required resources.

Our text is an E-book and directions for accessing it are located as an attachment to the Week 1 Forum. If you encounter difficulties viewing the e-book, please visit the HELP/FAQs section of the Online Library. If you still have questions, please contact librarian@apus.edu for assistance. **Please Note:** Stateside students will not be sent the hard copy version of this text. If you wish to purchase the text, you may do so through our recommended bookstore ED MAP or the bookseller of your choice.

Additional Resources

Betz, Chris. "GIS and Multimedia in the Military." *Directions Magazine.* March 18, 2003.
http://www.directionsmag.com/articles/gis-and-multimedia-in-the-military/123958

Booth, Bob and Mitchell, Andy. 1999. *Getting Started with ArcGIS GIS by ESRI.* http://web-facstaff.sas.upenn.edu/~dromano/classes/gis/files/Getting_Started_with_ArcGIS.pdf (

Chairman of the Joint Chiefs of Staff. 2012. *Joint Publication 2-03 Geospatial Intelligence in Joint Operations.* Washington: JCS. http://www.dtic.mil/doctrine/new_pubs/jp2_03.pdf .

Dempsey, Caitlin. "What is GIS?." *GIS Lounge.* March 1, 2012.
https://www.gislounge.com/what-is-gis/

Deogawanka, Sangeeta. "How GIS Supports the Fight Against Terrorism." January 29, 2015.
https://www.gislounge.com/gis-supports-fight-terrorism/

Goodchild, Michael. "Looking Forward Again: Four Thought on the Future of GIS in 2015 and Beyond." *Esri ArcWatch: GIS News, Views, and Insights.* http://www.esri.com/esri-news/arcwatch/0215/four-thoughts-on-the-future-of-gis-in-2015-and-beyond

Heuer, Richards. 1999. *The Psychology of Intelligence Analysis.* Washington, DC: Center for the Study of Intelligence. https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/psychology-of-intelligence-analysis/PsychofIntelNew.pdf

National Park Service. "OCOKA Military Terrain Analysis." *Vicksburg National Military Park.* n.d.
http://www.nps.gov/vick/parkmgmt/upload/5._OCOKA_Military_Terrain_Analysis.pdf

Newkirk, Greg and Perkes, Trevor. 2010. *Gaining Competency With GIS: How-to Manual for ArcGIS Desktop, Version 10.* Idaho: Maia L.L.C.
http://ebooks.apus.edu.ezproxy1.apus.edu/INTL432/Newkirk_2012.pdf

Paynich, Rebecca (ed.). 2013. "Identifying High Crime Areas – White Paper." International Association of Crime Anaylsts.

http://www.iaca.net/Publications/Whitepapers/iacawp_2013_02_high_crime_areas.pdf

Rosen, Rebecca J. "Interactive Gettysburg: Using Modern Mapping Tools for a New Look at the Historical Battle." *The Atlantic.* July 1, 2013. http://www.theatlantic.com/technology/archive/2013/07/interactive-gettysburg-using-modern-mapping-tools-for-a-new-look-at-the-historical-battle/277432/

Rossmo, Kim. 2005. "What is Crime Mapping?" National Institute of Justice, U.S. Department of Justice. http://www.cops.usdoj.gov/html/cd_rom/tech_docs/pubs/whatiscrimemappingbriefing book.pdf

Smithsonian Institution . "A Cutting-Edge Second Look at the Battle of Gettysburg." *Smithsonian Magazine.* July 1, 3013. http://www.smithsonianmag.com/history-archaeology/A-Cutting-Edge-Second-Look-at-the-Battle-of-Gettysburg.html

Tilton, Lindsay. 2014. "Securing the Super Bowl: Location data is instrumental in securing America's largest sporting event." *Trajectory Magazine.* http://trajectorymagazine.com/trajectory-mag/item/1751-securing-the-super-bowl.html

The Lesson folder contains various resources to include weekly lectures in .pdf format or MS PowerPoint presentations. Material found there is likely to appear in the Assignments as appropriate.

Evaluation Procedures

Each assignment will be evaluated by the instructor and comments may be given informally within the forum grading window or in more detail within the forum grading comment window. Each Assignment will be a cumulative product of the preceding Labs. Although the Labs are not graded individually, the exercises assigned in each Lab are linked directly to large segments of the graded Assignments. Students are encouraged to engage in the Labs and submit as directed so that problems with the software exercise can be identified early.

LATE ASSIGNMENTS: Late assignments and late forum posts will be accepted under certain circumstances. A student request for late submission must be initiated twenty-four (24) hours prior to the assignment deadline. Without prior permission by the instructor, late work will be assessed a penalty.

CITATION AND REFERENCE STYLE: All assignments for the School of Security and Global Studies (papers, essays, exams, and Forums) must follow the Turabian citation method. An online copy of may be found at:

http://www.press.uchicago.edu/books/turabian/turabian_citationguide.html. Students should be aware that in-text citations are the preferred method for citing sources (rather than in footnotes or endnotes). Any notes used in essays or assignments should be limited to extraneous information that the student wishes to include. The format for in-text citations is given in the Turabian guide linked above. Students are to use the parenthetical form (P) within the text of the document and the reference list form (R) in providing a list of sources.

Forum discussions – One initial post by Thursday; two follow-up posts to classmates by Sunday. Specific questions found in Forums tab of the classroom.

Progress Assignment – Short question and answer exercise and map requirement. Specific instructions found in Assignments of the classroom.

Midterm Assignment – Short question and answer exercise and map requirement. Specific instructions found in Assignments tab of the classroom.

Final Assignment – Short question and answer exercise and map requirement. Specific instructions found in Assignments tab of the classroom.

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Grade Instruments	Percentage
Forum Discussions	**25**
Progress Assignment	**25**
Midterm Assignment	**25**
Final Assignment	**25**
Total	**100**

Please see the Student Handbook to reference the University's grading scale.

For all university policies, including grading system, extensions, and disability accommodations, please see the APUS Student Handbook.

8 – Week Course Outline

8 Week Course

Week	Topic(s)	Learning Objective(s)	Readings	Assignment(s)
1	Mental Maps/Analytic Bias The Toolwire GIS Lab	Forum: CO-2 Lab: CO-1	**Newkirk and Perkes:** Chapter 1 **Booth and Mitchell:** Chapter 2 **Heuer:** Scan all	Discussion post Week 1 Lab Workbook
2	What is a GIS? Exporting GIS Files	Forum: CO-2 Lab: CO-3 Assignment: CO-1, 2, 4	**Newkirk and Perkes:** Chapter 2 **Booth and Mitchell:** Chapter 3 **Dempsey**: Read all **Heuer:** Chapters 2	Discussion post Complete Week 2 Lab Workbook Progress Assignment due at

			and 3	end of Week 2
3	GIS and National Security Importing Data from an Outside Source	Forum: CO-2 Lab: CO-5	**Newkirk and Perkes:** Chapter 3, Data	Discussion post Complete Week 3 Lab Workbook
4	Project Planning	Forum:CO-2, 6 Lab: CO-5 Assignment: CO-1, 2, 3, 4, 5, 7	**Newkirk and Perkes:** Chapters 4 - 6 **Booth and Mitchell**: Chapter 4: **JP2-03:** Read Chapter IV	Discussion post Complete Week 4 Lab Workbook Midterm Assignment due at end of Week 4
5	Geospatial Data Sources GIS Data Collection	Forum: CO-5, 6 Lab: CO-2, 4, 7	**Booth and Mitchell**: Chapter 5	Discussion post Complete Week 5 Lab Workbook
6	GIS in Crime Mapping GIS Data Storage	Forum: CO-2, 6, 7 Lab: CO- 3, 4, 6	**Booth and Mitchell**: Chapter 6 **"Identifying High Crime Areas"**: Read all **What is Crime Mapping**: Read all	Discussion post Complete Week 6 Lab Workbook
7		Forum: CO-2, 6	**Booth and Mitchell**:	

	GIS in Battlefield Terrain Analysis GIS Data Collection and Analysis	Lab: CO- 2, 7	Chapter 7 **"A Cutting-Edge Second Look at the Battle of Gettysburg."**: Read all **Rosen:** Read all **"OCOKA Military Terrain Analysis."** Read all **Heuer:** Reread Chapters 6 - 13	Discussion post Complete Week 7 Lab Workbook
8	The Future of GIS Analysis of GIS Data	Forum: CO-7, 7 Lab: CO- 6, 7 Assignment: CO-1, 2,3, 4, 5, 6, 7	**Booth and Mitchell**: Chapter 8	Discussion post Complete Week 8 Lab Workbook Final Assignment due at end of Week 8

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Policies

Please see the Student Handbook to reference all University policies. Quick links to frequently asked question about policies are listed below.

       Drop/Withdrawal Policy
       Plagiarism Policy
       Extension Process and Policy
       Disability Accommodations

Citation and Reference Style

Attention Please: Students will follow the Turabian/Chicago Style as the sole citation and reference style used in written work submitted as part of coursework to the University.
See http://www.apus.edu/Online-Library/tutorials/chicago.htm.

Late Assignments

Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals, I understand you must manage competing demands on your time. Should you need additional time to complete an assignment, please contact me before the due date so we can discuss the situation and determine an acceptable resolution. Routine submission of late assignments is unacceptable and may result in points deducted from your final course grade.

Netiquette

Online universities promote the advancement of knowledge through positive and constructive debate – both inside and outside the classroom. Forums on the Internet, however, can occasionally degenerate into needless insults and "flaming." Such activity and the loss of good manners are not acceptable in a university setting – basic academic rules of good behavior and proper "Netiquette" must persist. Remember that you are in a place for the rewards and excitement of learning which does not include descent to personal attacks or student attempts to stifle the Forum of others.

- **Technology Limitations:** While you should feel free to explore the full-range of creative composition in your formal papers, keep e-mail layouts simple. The Sakai classroom may not fully support MIME or HTML encoded messages, which means that bold face, italics, underlining, and a variety of color-coding or other visual effects will not translate in your e-mail messages.
- **Humor Note:** Despite the best of intentions, jokes and <u>especially</u> satire can easily get lost or taken seriously. If you feel the need for humor, you may wish to add "emoticons" to help alert your readers: ;-), :), ☺

Online Library

The Online Library is available to enrolled students and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search engines on the open Web. In addition, the Online Library provides access to special learning

resources, which the University has contracted to assist with your studies. Questions can be directed to **librarian@apus.edu**.

- *Charles Town Library and Inter Library Loan:* The University maintains a special library with a limited number of supporting volumes, collection of our professors' publication, and services to search and borrow research books and articles from other libraries.
- *Electronic Books:* You can use the online library to uncover and download over 50,000 titles, which have been scanned and made available in electronic format.
- *Electronic Journals:* The University provides access to over 12,000 journals, which are available in electronic form and only through limited subscription services.
- *Tutor.***com**: AMU and APU Civilian & Coast Guard students are eligible for 10 free hours of tutoring provided by APUS. Tutor.com connects you with a professional tutor online 24/7 to provide help with assignments, studying, test prep, resume writing, and more. Tutor.com is tutoring the way it was meant to be. You get expert tutoring whenever you need help, and you work one-to-one with your tutor in your online classroom on your specific problem until it is done.

Request a Library Guide for your course (http://apus.libguides.com/index.php)
The AMU/APU Library Guides provide access to collections of trusted sites on the Open Web and licensed resources on the Deep Web. The following are specially tailored for academic research at APUS:

- Program Portals contain topical and methodological resources to help launch general research in the degree program. To locate, search by department name, or navigate by school.
- Course Lib-Guides narrow the focus to relevant resources for the corresponding course. To locate, search by class code (e.g., SOCI111), or class name.

If a guide you need is not available yet, please email the APUS Library: librarian@apus.edu.

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Turnitin.com

Faculty require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. The instructor will post information in the classroom on student procedures.

Required Readings

See Course Outline.

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