

## **GIS Certificate Advisory Committee**

### **MINUTES**

**01/18/2017 11:00 a.m.**

**Bolton 420**

1. Meeting called to order at 11:00 am. Attendees: Nancy Frank, Bob Schneider, Paul Vepraskas, Changshan Wu, Zengwang Xu, Jessica Swaray (student rep), Donna Genzmer (non-voting)
2. Approval of the Agenda passed
3. Approval of Minutes 8/17/16 passed
4. Program changes:  
The committee approved adding Criminal Justice 520 as an Elective in the GIS Certificate Program. The GCAC requests that there be a definition of expectations specific to graduate students and collegially requests a meeting with Dr. Rebecca Headley for the purpose of making this course a richer experience for all. (Please note that program changes need to be approved by both department faculties before it moves to the next steps of governance.)
5. Enrollment update: 3 students completed the Certificate in December 2016, pending Graduate School review; 3 students have been admitted to the program for Spring 2017; 3 students are pending admission for Spring 2017.
6. Status of the Interim Coordinator: Donna's status is changing from Interim to permanent.
7. Gainful Employment Disclosure: The GCAC wishes the students in the GIS Certificate Program continue to be eligible for Financial Aid related to Gainful Employment. The GCAC requests that Donna be given the necessary university support to accomplish this.
8. Meeting adjourned at 11:48 a.m.

Respectfully submitted,

Donna G Genzmer, GISP

**University of Wisconsin-Milwaukee**  
**Helen Bader School of Social Welfare**  
**Department of Criminal Justice**  
**ANALYSIS ORIENTED TECHNOLOGY**  
**(CRM JST: 520-001; 60195)**

**Instructor:** Rebecca Headley

**Email:** rheadley@uwm.edu<sup>1</sup>

**Semester:** Spring, 2017

**Office Hours:** W/2:00pm-4:00pm (Enderis Hall 1115)

*(or by appointment)*

**Day/Time:** M/5:00pm-7:40pm

**Location:** Enderis Hall, 1024

**Credit Hours:** 3

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*NOTE:* This course syllabus acts a *general* plan for the course, however, changes may be necessary. Students will be informed of any changes as soon as possible via D2L.

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### **COURSE DESCRIPTION**

This course provides a technological introduction to the basic functionality of ESRI's ArcGIS for mapping and analyzing crime data. Throughout this course, students will develop the skills needed to create, analyze, and interpret crime maps. Moreover, students will acquire the appropriate means for the delivery and dissemination of findings and maps for a variety of different audiences. This course will employ several mechanisms to aid in students' understandings of the theoretical and empirical applications of crime mapping and spatial analysis. PowerPoint lectures and hands-on exercises will be used to facilitate the learning and application of an array of mapping techniques, as well as to evaluate student understanding of these skills.

Furthermore, students will hone their understanding of community-oriented theories and approaches through engaging in a service learning partnership with one of several Milwaukee-based agencies. In this professional-working relationship, teams of students will aim to answer a variety of questions by using what they have learned throughout this course. Not only will this allow for students to provide a service to their communities, but will also allow for real-world applications of learned skills.

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### **COURSE PREREQUISITES**

Students must be of junior standing or above, and have successfully passed CRM: 110.

To succeed in this class, students need to be proficient in basic computer skills (e.g., word, excel, internet browsing, email). Additionally, students will be required to use ArcGIS and SPSS software packages throughout the course of the semester. Please note that ArcGIS is **not** Mac OS compatible, however, this software package is accessible on computers in UWM computer labs. Students will need a USB/Jump drive for this class that holds a minimum of 32 GB of data.

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### **TEXTS**

***Textbooks (required):***

Hill, Bryan & Paynich, Rebecca (2014). Fundamentals of Crime Mapping (2<sup>nd</sup> Ed.). Burlington,

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<sup>1</sup> The best way to contact me regarding any class material (or questions) is through email. I will reply to any questions within 24 hours, except on Saturday, Sunday, and Holidays. Please use professional etiquette when contacting your agencies, group mates, and me.

MA: Jones & Bartlett Learning. ISBN: 978-1-284-02806-5.

***Textbook (recommended if not used in CRM: 510):***

Boba-Santos, Rachel (2013). Crime analysis with crime mapping (3<sup>rd</sup> Ed.). Thousand Oaks, CA: Sage Publications. ISBN: 978-1-4522-0271-6

***Additional reading/articles (required):***

Posted on Desire2Learn.

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## **COURSE OBJECTIVES**

From material covered in this course, both through lectures and readings, students will have the potential to meet the following course objectives. Students must play an active role in meeting the course objectives by attending class, completing readings, engaging in discussion, excelling in required course work, and being prepared for every class sessions. Due to the breadth of information covered in each class session, preparation is key to success in this course. Additionally, other individual student factors, outside the instructor's control, may affect the outcome of students reaching course objectives. By the end of this semester, students will be expected to effectively be able to:

- 1) Collect, edit, and convert tabular data to allow for use within ArcGIS;
  - 2) Model geographic vector data, including point, line, and polygon data;
  - 3) Create and use address locators to geocode data;
  - 4) Create effective, professional, and meaningful crime maps;
  - 5) Analyze spatial and crime patterns;
  - 6) Engage in service learning with an approved community partner;
  - 7) Work with community partner agents, as well as group mates, in a respectful and collaborative manner; and
  - 8) Clearly communicate findings through the delivery of a written technical report and verbal presentation.
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## **COURSE REQUIREMENTS:**

**ATTENDANCE:** Students are expected to attend to *every* class, not only prepared to answer questions regarding assigned readings, but also ready to share ideas, comments, and concerns

that are rooted in the readings and empirical literature. A substantial portion of each class meeting is based on discussion, and failure to add to discussion has the potential to result in the inability of the instructor to detect areas students are struggling with. Poor attendance, a lack of interest, **playing on a computer/phone**, and not completing the readings prior to the class will decrease your grade in this class, and may result in dismissal from class meetings.

Students are allowed two absences from class for any reason (e.g., unforeseen events, illness, weather, just don't feel like coming). You do not need to provide doctors' notes, court notices, or other documentations for these absences. Each additional absence beyond this, regardless of reason, will result in a one letter grade deduction to your final grade (e.g., from A to B). You will be rewarded with a three-percentage point boost to your final grade (e.g., from 92% to 95%) if you have no absences throughout this course. Keep in mind, if you arrive to class late (i.e. 5:01pm or later) you will forfeit your opportunity to receive this reward.

**UNIT APPLICATION WRITE-UP:** This course is broken into four units. After moving through each unit, students are required to write a brief essay that summarizes the material covered within the unit, including new skills learned. Next, students will provide a realistic application of each skill set as it would apply to GIS and/or spatial analysis in the real world (e.g., agency projects). Lastly, students will discuss what they found to be the most helpful or important and areas or techniques that she or he is struggling with. These essays allow for the instructor to adapt class time based on areas of student interest, as well as areas that need further development. Students will only complete write-ups for Unit 1, Unit 2, and Unit 3.

**SERVICE LEARNING JOURNAL:** Rather than completing traditional homework assignments and an examination, you will work with the community partner, during which you will be required to participate in a variety of different activities. Such activities include: attending orientation sessions provided by the agency, assisting with public events, cleaning and entering address data, developing survey instruments, and collecting data from the field. These tasks will be specific to the community partner of your choice, however, you must engage in a minimum of two volunteer events.

Over the course of the semester, you will keep a journal of your activities as they relate to your community partner and service-learning component of this course. Each of the journal entries must be approximately two to three pages in length and will (a) briefly describe the specific activity you engaged in, (b) the reasons for engaging in this activity, (c) why this activity is important for your learning and ability to carry out this research project, and (d) how this activity can help the community agency, (e) what each of the other team members in your group have been working on, and what the game plan is for the immediate future. All journal agencies must be typed in double spaced, Times New Roman font, size 12, with one inch margins. By the end of the semester, your journal will consist of at least 12 journal entries (approximately 1 per week). Each student will submit seven of his or her journal entries at mid-term (Monday, April 3, 2017 @ 5:00pm), and the remaining 5 journal entries on the same day as the community mapping project is due (Monday, May 15, 2017 by 5:00pm).

**PRESENTATION:** Each student team is required to deliver a PowerPoint presentation of the results from your Community Mapping Project. You will have 20 minutes to present your findings to the class, followed by a 10 minute discussion facilitated by your team. Within your presentation, be sure to include each of the following elements:

1. A brief background and significance of your project. What is the general mission of the agency you partnered with? What is important and unique about your project?
2. Clearly state each of your team's research questions.
3. How was the data obtained? Be sure to discuss key variables. What methods/techniques were used to answer each of the aforementioned research questions?
4. What are the main results from your team's project?
5. What are potential implications of your findings? What do they mean for the community and agency your team partnered with? What recommendations would you provide this agency?

Presentations will be graded on the ability of students to clearly communicate the above, outlined information, incorporation of visual aids, the ability to facilitate meaningful class discussion, and the general organization and preparedness of the presentation. This exercise allows for each team of students to discuss what they have been working on in the field, as well as for students to further refine their understanding of different GIS applications. Furthermore, this presentation allows for teams to receive feedback regarding the direction of their project. This feedback has the aim of helping teams identify areas to consider before submitting their final written report.

**COMMUNITY MAPPING PROJECT REPORT:** This project is intended to measure your understanding and ability to apply GIS concepts and functions to real-world scenarios. This report is due on Monday, May 14, 2017 at 5:00pm. Reports received after this time (i.e. 5:01pm) will be subjected to a 10% reduction in the grade. For each 24 hour period that passes, the grade will be reduced by an addition 10%. Reports will not be accepted after 3 days (i.e. Thursday, May 18, 2017 at 5:01pm). Each component of this project is outlined below.

1. In collaboration with your team's community agency, develop at least three related questions that the agency is in need of learning more about and that must be answered using a GIS. These questions can be descriptive, exploratory or explanatory in nature, but they must be spatial.
  - a. For example, "Are the parolees on my caseload mostly violent offenders?" is NOT a spatial question.
  - b. "How are the violent offenders on my caseload *distributed* throughout my jurisdiction?" IS a spatial question.
  - c. Be careful to choose questions that do, in fact, require GIS to answer them!
2. Find (or create) all necessary datasets/shapefiles to use in a GIS to answer your questions. Use base layers as appropriate.
3. Produce at least four final maps using sound cartographic principles.
4. Turn in a technical report of no more than 2500 words. This does not include: maps, graphics, screen captures, figures or references. You must also submit the technical report and the maps to your community partner. The technical report should be produced in color. Be sure to consider the feedback received during your class presentation.

### **Components of Technical Report**

This report should be written in a professional and organized manner. Follow the instructions below to ensure that you have completely answered each portion of the report. Use the headings below as the general format of your paper (using APA formatting). Be sure to include appropriate citations in APA in all portions of your report.

1. Introduction:

The introduction of your paper should allow the reader to have an understanding of what the current study is aimed to examine. Moreover, it should be clear to the reader why this is an important topic and why it is a novel research question (answers the “*So what?*”). Next, provide the reader with what will be found in each of the subsequent sections of the paper. Lastly, state your research questions and why GIS was required to answer each research question.

2. Methods:

This section of your report explicitly states what data you used, how you obtained this data, and how you used this data to test your research question(s). Explain how you cleaned and/or recoded your data. Additionally, discuss how ArcGIS was used to produce each map. Provide a discussion of each of the steps needed to be taken if someone wanted to reproduce your maps. Color images of the final maps must be included in this section.

3. Results:

In this section you will discuss what you found! Your findings from each map should be discussed separately, with each discussion including: the information/findings that the map is intended to communicate (i.e. what is the maps purpose), and the interpretation of what the map shows.

4. Discussion, Policy Recommendations, & Conclusion:

Your discussion should explain how your results answer each of your research questions. Additionally, relate what you found to spatial theories of offending. Also include recommendations that you would give to this agency or to local policy makers. Why are your findings important, and why do they support these recommendations? Lastly, the conclusion should end with a declarative statement with the main takeaway message from your study (this is what you are leaving the reader with, so make sure it is clear and strong).

5. References:

All references used throughout your report should follow APA citation format. Be sure to include a reference page at the end of you report.

**TIME INVESTMENT:** This class meets once weekly for 2 hours and 40 minutes, for a total of 42.67 hours of required lecture time throughout the course of the semester. Students should expect to take home *at least* 45 hours of work (approximately 3 hours/week) completing readings, book exercises, and preparing for class. Additionally, this course requires three unit application write-ups. Students should anticipate spending *at least* 2 hours on each unit application write-up. Students are expected to have on-going participation with their community partnership agency, as well as complete 12 entries in their service learning journals. Students should expect to spend a minimum of 30 hours carrying out these components of this course. Lastly, students should anticipate *at least* 20 additional hours on their final reports and presentations. All told, *this course is likely to take at least 143.67 hours of your time.*

<b>Expected Workload (hours)</b>	
Lecture/In-Class Work	42.67
Reading, Exercises, Class Preparation	45.00
Unit Application Write-Up (2 hours each)	6.00
Community Partnership & Journal	30.00
Report and Presentation	20.00
TOTAL 143.67	

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### POINTS & GRADES

Final grades are determined according to the points assigned to each of the course requirements:

<b>Graded Item</b>	<b>Points Each</b>	<b>% Each</b>	<b>Total Points</b>	<b>Total %</b>
<i>Unit Application Write-Ups (3)</i>	5	5%	15	15%
<i>Community Partnership Journal (12)</i>	2.5	2.5%	30	30%
<i>Presentation (1)</i>	---	---	10	10%
<i>Community Partnership Report (1)</i>	---	---	45	45%

To calculate your grade: 
$$\frac{\text{Your points earned}}{\text{Total Point Available (100 points)}}$$

The distribution for the final grades by percentage (and points) is as follows:

A = 93-100%	C = 73-76.9%
A- = 90-92.9%	C- = 70-72.9%
B+ = 87-89.9%	D+ = 67-69.9%
B = 83-86%	D = 63-66.9%
B- = 80-82.9%	D- = 60-62.9%
C+ = 77-79.9%	F = 0-59%

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## COURSE OUTLINE

The outline below provides a general plan of the topics and readings to be covered in the course and deviations may be necessary. Readings listed on the course outline should be completed prior to the corresponding class session date. The instructor will notify students in advance of any changes in topics and readings.

Date:	Lecture Topics:	Lab Topics:	Readings & Assignments Due
<b>Unit 1: Foundations of Crime Mapping &amp; Theoretical Perspectives</b>			
January 23	Introduction to course  Guest speakers from Community Partnership Agencies <sup>2</sup>	Review Syllabus  Discussion of MOUs	
January 30	Introduction to crime mapping  Historical & contemporary crime mapping	Navigation in ArcGIS  Basic features of ArcGIS	Chapter 1  Read MOU for each agencies.  Rank the top three agencies you would like to be partnered with. Include a brief justification.
February 6	Review of spatially relevant theories: a. Social Disorganization b. Collective Efficacy c. Environmental Criminology	Finding, obtaining, and importing data	Chapters 2 & 3
February 13	Geography and Individual Decision Making  Spatial units of analysis  Police department application of theory, spatial analysis, and evidence-based practice	Using Census data  Obtaining data from MPD COMPASS	Chapters 4 & 5

<sup>2</sup> Tentative. NOTE: These speakers may be scheduled outside of class meeting times.

Unit 2: Research and Crime Data			
February 20	Review of projections Distribution of crime over place	Creating address locators Cleaning data Geocoding point data	<b>Unit 1 Application Write-Up Due!!</b>  Chapters 6 & 7
February 27	<i>Part 1:</i> Crime trends Modeling crime trends	<i>Part 1:</i> Joins and Relates Editing, labeling, and symbolizing data/features within ArcGIS	Chapter 8
March 6	<i>Part 2:</i> Crime trends Modeling crime trends	<i>Part 2:</i> Editing, labeling, and symbolizing data/features within ArcGIS  Map elements	
March 13	<b>In Class Work Session: Community Mapping Project</b>		
March 20	<b>Spring Break!! (no class)</b>		
Unit 3: Analyzing Spatial Crime Data			
March 27	Review of statistical terminology Different types of classifications of data	Classification schemes	<b>Unit 2 Application Write-Up Due!!</b>  Chapter 9
April 3	<i>Part 1:</i> Discussion of the importance of buffers Different measures of distance Different types of maps, including: Choropleth, Hot Spot, and kernel density maps	<i>Part 1:</i> Creating buffers  Creation of choropleth maps	<b>Part I of Service Learning Journals Due!!</b>  Chapters 10 and 11

April 10	<p><i>Part 2:</i></p> <p>Different measures of distance within ArcGIS</p> <p>Discussion of different types of maps, including: Choropleth, Hot Spot, and kernel density maps</p>	<p><i>Part 2:</i></p> <p>Creation of choropleth maps</p> <p>Creation of Hot Spot maps</p> <p>Creation of Kernel Density maps</p>	
<b>Unit 4: Mapping and Writing for Your Audience</b>			
April 17	<p>Dissemination of findings</p> <p>Technical writing</p> <p>Appropriate mapping techniques for different audiences</p>		<p><b>Unit 3 Application Write-Up Due!!</b></p> <p>Chapter 12</p>
April 24	<b>In Class Work Session: Community Mapping Project</b>		
May 8	Student Presentations		<b>Community Mapping Project Presentation Due!!</b>
May 15	<b>Final Project Due (no class meeting)</b>		<p><b>Community Mapping Project Report Due!!</b></p> <p><b>Part II of Service Learning Journals Due!!</b></p>

### **University Policies.**

Please review University policies at the following link:

[http://www4.uwm.edu/secu/news\\_events/upload/Syllabus-Links.pdf](http://www4.uwm.edu/secu/news_events/upload/Syllabus-Links.pdf)

### **Accommodation for Religious Observances**

Students will be allowed to complete course requirements that are missed due to a religious observance recognized by UWM. <http://www.uwm.edu/Dept/SecU/acad%2B>

### **Accommodation for Students with Disabilities**

If a student is in need of any accommodations due to disability, the student must notify the instructor and provide related paperwork within the first week of the semester. For additional information, go to the following link: <http://www4.uwm.edu/arc>

### **Support Services**

Any student that has been identified by the university as requiring support services in terms of test-taking or other class activities should notify me as soon as possible.

More information can be found at: <http://www.uwm.edu/Dept/DSAD/SAC/SACltr.pdf>

### **Accommodation for Military Service:**

Accommodations for absences due to the call-up reserves to active military services will be granted. Please inform the instructor during the first week of the semester if you are currently under reserve or active military duty. For more information, see the following link:

[http://www4.uwm.edu/current\\_students/military\\_call\\_up.cfm](http://www4.uwm.edu/current_students/military_call_up.cfm)

### **Incompletes**

A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of term work. For more information see the following link:

[https://www4.uwm.edu/secu/docs/other/S\\_31\\_INCOMPLETE\\_GRADES.pdf](https://www4.uwm.edu/secu/docs/other/S_31_INCOMPLETE_GRADES.pdf)

### **Academic Dishonesty**

All students are **highly** recommended to read the University's official policy on academic dishonesty. Regardless of whether you choose to read this policy, you are required to adhere by its standards. Academic dishonesty of any kind (e.g., cheating, copying, plagiarism) will not be tolerated in this course. All suspected cases of cheating will be handled according to the Academic Integrity Policy at UWM (see <http://www.uwm.edu/Dept/OSL/DOS/conduct.html>) and will receive an **F** in the course (additional sanctions may apply).

<http://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/>

### **Classroom Civility**

Students and faculty alike should strive to create a class environment that reflects mutual respect and the importance of learning. If a student's behavior threatens to disrupt that environment, the faculty member has a responsibility to seek resolution of the problem.

In order to maintain an environment conducive to education, the use of cell phones (including for text messaging), pagers, MP3 players, or any other electronic devices is prohibited during class time. **These devices must be turned off during class time.** Text messaging during class is not appropriate and will not be allowed. If a student text messages during class, s/he will be warned the first time and will be asked to leave class the second.

*Discriminatory conduct (such as sexual harassment).* Discriminatory conduct will not be tolerated by the University. It poisons the work and learning environment of the University and threatens the careers, educational experience, and well-being of students, faculty, and staff. See the following link for more information:

[https://www4.uwm.edu/secu/docs/other/S\\_47\\_Discrimina\\_duct\\_Policy.pdf](https://www4.uwm.edu/secu/docs/other/S_47_Discrimina_duct_Policy.pdf)

### **Complaint Procedures**

Students may direct complaints to the head of the academic unit or department in which the complaint occurs. If the complaint allegedly violates a specific university policy, it may be directed to the head of the department or academic unit in which the complaint occurred or to the appropriate university office responsible for enforcing the policy.

[https://www4.uwm.edu/secu/docs/other/S\\_47\\_Discrimina\\_duct\\_Policy.pdf](https://www4.uwm.edu/secu/docs/other/S_47_Discrimina_duct_Policy.pdf)

### **Grade Appeal Procedures**

A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow the established procedures adopted by the department, college, or school in which the course resides or in the case of graduate students, the Graduate School. These procedures are available in writing from the respective department chairperson or the Academic Dean of the College/School.

<http://www4.uwm.edu/secu/docs/other/S28.htm>

**Other.** The final exam requirement, the final exam date requirement, etc.

<http://www4.uwm.edu/secu/docs/other/S22.htm>

### Important Dates<sup>3</sup>

<b>January 7</b>	Approximate date that spring tuition assessments will appear on PAWS for enrolled students.
<b>January 19</b>	Final date for Spring waitlist process run. Waitlists will be purged after the final run.
<b>January 22</b>	Last day to withdraw (drop all classes) from the semester without charge or for full refund.
<b>January 23</b>	First day of classes. Start of Late Enrollment Period - \$50.00 late enrollment fee assessed for students enrolling in classes for the first time in the term.
<b>January 27</b>	Deadline for Spring graduation applications for undergraduate students. Submit application via PAWS.
<b>February 3</b>	Last day to add full-term classes, change sections, or change the grading basis for classes (e.g., graded to credit/no credit or audit, or vice versa) without approval. See the <a href="#">One Stop Student Services website</a> for more information.
<b>February 4</b>	Deadline for Spring graduation applications for graduate students. Submit applications via PAWS.
<b>February 17</b>	Last day to drop full-term courses without a "W" on record. Tuition and fees apply.
<b>March 17</b>	Last day to drop or withdraw from full-term courses. Tuition and fees apply.
<b>March 19-26</b>	Spring Recess - No Classes (UWM offices are open).
<b>May 11</b>	Last day of classes.
<b>May 12</b>	Study day.
<b>May 13, 16-20</b>	Final Exam Period.
<b>May 20</b>	Last day of the Spring term. Date of degree conferral for Spring graduates.
<b>May 21</b>	Graduation ceremony.
<b>May 23</b>	Priority deadline for instructor grading in PAWS per faculty policy. More information on instructor grading on the <a href="#">Registrar's Office website</a> .
<b>May 30</b>	Final call deadline for instructor grading (final grade run date). All grades not entered into PAWS by 4:30 pm will result in a value of NR, or not reported. After this point, all grade entries need to be submitted as a grade change.
<b>May 31</b>	Approximate date that Academic Standing and Dean's Honors appear for spring.

<sup>3</sup> Information obtained from the UWM Registrar's Office: Division of Student Affairs (<http://uwm.edu/registrar/students/dates-deadlines/important-dates-by-term/>)