Approval Chart for Curriculum Changes

A = Approve I= Information Item[1] R= Advise & Respond[2]

Course Number ENVR 241 or Degree Plan(s) _____

State the requested change and reason. A memo may be attached if more space is necessary.

Geographic information systems have become an essential component of natural resource management. It is very common today to see ability to use GIS as a desired or required skill in job announcements. The 2018 Visiting Committee even commented on how useful it would be to add a GIS course (though it was not in their written report). Because of its importance, the course will be added to the ENVR core. It will replace ENVR 320 Energy Resources. ENVR 320 also could be a valuable course. However, we currently have no one well-suited to teach it as it is currently designed. We are considering restructuring it and offering it as an elective in the future.

Circle the number that corresponds to the requested change. Degree plan changes are on the second page.

					COUNCIL[3]					
	Change to a Course	**Dept./School**	**College Academic**	**Deans**	**TEC**	**UGEC**	**UUAC**	**GRAD**	**Provost**	**President**
1.	Title (description unchanged)	A	A	A		I			I	I
2.	Description (not affecting content)	A	A	A		I			I	I
3.	Course term(s)	A	I	A		I			I	I
4.	Content (substantive change)	A	A	A		I			A	I
5.	Number of hours (lecture, lab, contact)	A	A	A		A			A	I
6.	Course number within the hundred	A	A	I		I			I	I
7.	Course number beyond the hundred	A	A	A		A			A	I
8.	Prerequisites	A	A	A		I			I	I
9.	Course fee(s)	A	--	A		--			A	I
10.	From U to G *or* G to U	A	A	A		A			A	I
11.	Cross list with another department: U or G level	A	A	A		A			A	I
12.	Department of record	A	A	A		A			A	I
13.	Open or close a course	A	A	A		A			A	I
14.	New course — See website for application and process. This change includes combining or splitting a course(s).	A	A	A		A			A	I

Note: When an academic unit does not have a council, the UGEC and/or UUAC will serve as its academic council, depending on the nature of the issue.

Approval Chart for Curriculum Changes

A = Approve I= Information Item[1] R= Advise & Respond[2]

	Change to a Degree Plan	Dept./School	College Academic	Deans	COUNCIL[3] TEC	UGEC	UUAC	GRAD	Provost	Faculty	President	Board of Trustees
1.	University Requirements — Change in approved course content[6]	A	A	A	A				A	--	A	--
2.	University Requirements — Add or drop a required course from the University Requirements chart[6]	A	A	A	A				A	A	A	--
3.	University Requirements — Add or drop a course from a menu within the University Requirements[6]	A	--	--	A				A	--	A	--
4.	University Requirements — Change hours within a menu on the University Requirements chart[6]	A	A	A	A				A	A	A	--
5.	Major — Revision of major [4,5]	A	A	A	A				A	--	A	--
6.	Major — Adopt or change admission requirements	A	A	A	A				A	--	A	--
7.	Major — Add [4,5]	A	A	A	A				A	A	A	I
8.	Major – Discontinue (proposed by the department or college)	A	A	A	A				A	A	A	I
9.	Major – Discontinue (proposed by the Provost)	See below.										
10.	GPA — Revise major or cumulative requirement	A	A	A	A				A	A	A	--
11.	Minor — Revise course selection	A	A	A	I				I	--	I	--
12.	Minor — Add	A	A	A	A				A	--	A	--
13.	Minor – Discontinue (proposed by the department or college)	A	A	A	A				A	--	A	--
14.	Minor – Discontinue (proposed by the Provost)	See below.										
15.	Degree — Add	A	A	A	A				A	A	A	I
16.	Degree – Discontinue (proposed by the department or college)	A	A	A	A				A	A	A	I
17.	Degree – Discontinue (proposed by the Provost)	See below.										
18.	Any change to a graduate degree program	A	A	A	A				A	--	A	--

	Provost-Proposed Change	Provost	Department	Dean	COUNCIL[3] TEC	UUAC	Graduate	Faculty	President	Board of Trustees
1.	Major/Graduate Program – Discontinue (proposed by the Provost)	A	R	R	A			A	A	I
2.	Minor – Discontinue (proposed by the Provost)	A	R	R	A			--	A	--
3.	Degree – Discontinue (proposed by the Provost)	A	R	R	A			A	A	I

Approval Chart for Curriculum Changes

A = Approve I= Information Item[1] R= Advise & Respond[2]

					COUNCIL[3]					
	Change to the Catalog Information	**Dept./School**	**College Academic**	**Deans**	**UGEC**	**UUAC**	**GRAD**	**Provost**	**Faculty**	**President**
1.	General requirements for graduation including course requirements that are common to all majors for all degrees[7]	--	--	--	A			A	A	A
2.	Admission requirements	--	--	--	A			A	A	A
3.	Policies governing academic probation and suspension	--	--	--	A			A	A	A
4.	Requirements for graduating with honors	--	--	--	A			A	A	A

[1] Councils may request additional information about "Information" items. These items are approved as "Consent Agenda."

[2] The Dean and Department should respond to the Provost's recommendation to close a program in writing. Advise & Respond (R) requires that the voting body should receive the written responses at least one week prior to the vote.

[3] All courses that meet University Requirements for general education must go through UGEC. Courses or degrees offered only to students seeking teacher certification must go through the Teacher Education Council. All undergraduate changes must go before the UUAC. All graduate degree plan changes must go through the Graduate Council.

[4] A minimum of 30 hours is required for a major. A maximum is specified for each degree (e.g., BA, BS). The university minimum for elective hours is 6, unless the requirements of external accrediting bodies make it impossible.

[5] Program or course changes that apply to any major that includes Teacher Certification will be reviewed by the college, the Teacher Education Council (TEC), and then the UUAC.

[6] Courses that satisfy ACU's University Requirements (General Education) will normally have lower-level numbering, be free of prerequisites and co-requisites, appeal to more than one or two majors, and "not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession" (SACS 2.7.3). Departments may request exceptions to the first three criteria.

[7] The UUAC approved the clarification that "general requirements for graduation" means the enumerated items in the "General Requirements for Bachelor's Degrees" section of the catalog.

Revised 8-26-19

Curriculum/Catalog Changes Signature Page

Department/School Chair(s)

Signature	09/09/2019 *Approval date*
Signature	*Approval date*

College Academic Council(s)

Signature	10-18-19 *Approval date*
Signature	*Approval date*

Dean(s)

Signature	12/3/19 *Approval date*
Signature	*Approval date*

Teacher Education Council

Chair's signature	*Approval date*

General Education Council

Chair's signature	*Approval date*

Undergraduate Academic Council

Chair's signature	*Approval date*

Graduate Council

Chair's signature	*Approval date*

Provost

Signature	*Approval date*

Faculty

Chair of faculty senate	*Approval date*

President

Signature	*Approval date*

Application for a New Course v10.7

Course ID (*Subject and Number*)	ENVR 241

I. Systems and Catalog Information Complete each item.

1	Course Developer	Jim Carpenter, Robert Burke
2	Course Instructor	Robert Burke
3	Course Title	Geographic Information Systems
4	Course Abbreviation for Banner if title is more than 30 characters	
5	College	Arts and Sciences
6	Department or School	Agricultural & Environmental Sciences
7	Number of Credit Hours	3
8a.	Number of contact hours – lecture	3
8b.	Number of contact hours – lab/activity	0
9	Is the course for a fixed or variable number of credit hours?	Fixed
10	Explanation for variable credit	N/A
11	Is the course repeatable for additional credit?	No
12	Maximum total number of credit hours a student can earn for this course	3
13	What type of course is this? (Select one option. Please see Schedule Type definitions on Page C.)	X Traditional lecture _Traditional lab _Traditional lecture/lab _Experiential Learning _Seminar _Studio _Thesis _Dissertation
14	Number of faculty workload hours	3
15	Grade Mode	X Standard

		_Credit/No Credit (undergrad only)
16	Maximum Enrollment	18
17	**Catalog Description** (50 words or less)	The course will introduce specific approaches to applications of Geographic Information Systems (GIS) to natural resource analysis, and fundamentals of geographic data discovery, cataloging, management, and display. There are no Prerequisites. The course is targeting students within natural resource fields of study at a sophomore level.
18	List any prerequisites (course/s, test scores, class standing, major, etc.)	None
19	List any corequisites (these *must* be taken at the same time; note that a single requirement cannot be both a prerequisite *and* a corequisite)	None
20	If the course is cross-listed, specify the Course ID(s)	N/A
21	Does this course require any additional student course fees?	_X_ No __ Yes If yes, attach a completed "Request to Add or Change Course Fees" form. Describe in section IV-8.
22a	Will the course be offered in **fall** terms?	__ No _X_ Yes If yes: all, even, or odd years?
22b	Will the course be offered in **spring** terms?	_X_ No __ Yes If yes: all, even, or odd years?
22c	Will the course be offered in **summer** terms?	_X_ No __ Yes If yes: all, even, or odd years?
23	First semester this course will be offered under new Course ID. *May not be earlier than the coming fall semester.*	Fall 2021
24	Is this course required for a degree/s?	__ No _X_ Yes If yes, attach a revised degree plan(s) reflecting the placement of the new course.
25	Should the addition of this course be	_X_ No

	retroactively applied to the degree plan it supports? *This is rare, and rationale should explain compelling extenuating circumstances.*	__Yes If yes, provide rationale:
26	Has this course been offered as a Special Topics course? *New courses are not required to be taught as Special Topics courses prior to approval.*	__No _X_Yes If yes, provide course ID, term, and enrollment: ENVR 440, Fall 2017 (4, started with 8); Fall 2018 (8)
27	List any courses in which the content overlaps the proposed course. (Course ID and Name) *Attach a statement from the instructor/dept chair of the existing course justifying the new offering in Section IV-D.*	N/A

II. Curriculum

A. Explain effect on degree plans. If the addition of the course alters degree requirements, submit a separate Approval Chart for Curriculum Change to update the degree plan.

This course will replace ENVR 320 in the ENVR core.

B. Justify the addition of this course to the current curriculum, explaining the gap it meets.

GIS has become an essential skill in natural resources. Many job announcements list GIS knowledge in their desired skill sets. The 2017 Visiting Committee commented on the importance of GIS skills in new graduates. GIS also is used in a number of different disciplines, including marketing, engineering, and government.

III. Course Design

A. Audience and Course Goal
   1. Describe the intended audience, including prerequisite skills.
   2. State the overarching course goal(s) in performance terms.

1 Intended audience is all environmental science students. Other students in selected disciplines may find the course useful. There are no prerequisite skills.

2 **Course goal:** Geographic Information System (GIS) is a computer system for capturing, storing, querying, analyzing, and displaying geographically referenced data. It has become commonplace in a multitude of disciplines. This class outlines the principles of GIS and is designed to provide basic knowledge of GIS theory and application. Issues of data acquisition and the use of GIS for real-world applications are emphasized. ENVR 241 is one of the required courses for Environmental Science majors, and thus competency is required. The course is designed to address applications of ecology, biology, policy, economics, and administration of

agricultural and environmental science at intermediate level, as well as understanding the competency of resource measurement, management and oral and written communication skills at advanced level.
Competencies: Students will demonstrate competency in the fundamentals of GIS in natural resource management. This will be achieved through the reading, writing, and testing of lecture materials. Students will understand basic concepts and principles of GIS theory; map design, spatial data collection storage, format, and editing; spatial analysis and demonstrate the ability to use GIS software. This will be achieved through laboratory instructions and assignments. They will also understand professional ethics through use of validated data and professional or peer-reviewed sources; and demonstrate competency in oral and written communication skills through writing, project preparation and presentation.

B. Student Learning Outcomes and Measurements

	Student Learning Outcome	**Measurement**
1	Understand basic GIS concepts and application	Written essays and major paper, exams
2	Ability to use GIS software	Laboratory assignments, project
3	Demonstrate professional ethics	Use of validated data and professional or peer-reviewed sources in assignments
4	Demonstrate competency in communication skills	Project presentation

3. Text and Resources

Give the full publication information of the textbook/s and other required resources and outside readings. For **combined undergraduate/graduate** courses, make two lists:

A. full publication information; label **Undergraduate**.
B. full publication information; label **Graduate**.

Textbook: *Required*: Wing, M. G. and Bettinger, P. Geographic Information Systems: Applications in Natural Resource Management, 2nd Edition, Oxford, ISBN 9780195426106.

Software: Esri ArcGIS Desktop 10.4.1 with the Advanced (ArcInfo) license level. ArcGIS is available through ACU, which has a site license.

IV. Supporting Documentation

Required of all applications	
1	**Approval Chart for Curriculum Changes**
2	**Syllabus** — **Attach** the syllabus for the course based upon the anticipated first-

	semester offering.
3	**Instructional Design** — The syllabus must be reviewed by the Adams Center. **Attach** a copy of the Adams Center letter.
4	**Library** — Submit new course application and syllabus to the Library dean's office. **Attach** the Library's memo.
Attach if applicable	
5	**Content Overlap** — Include one document for each course you listed in Section I-27. **Attach** statement from instructor/dept chair of existing course justifying the new offering.
6	**Departmental Resources** — List the resources that support the course and are available only through the department, if applicable. **Attach** the list of the holdings and the location/s.
7	**Resources** — List resources (other than library or departmental resources) that are needed to support this course (computers, lab equipment, other technology, etc.). **Attach** a complete list of all items and indicate possible sources or estimated cost of each. List the sources of any needed funds.
8	**Expenses** — List additional expenses needed to implement this course (full-time or part-time faculty, graduate or lab assistants, student employees, travel, special student costs, room renovation, storage facility, etc.). **Attach** a complete list of all items, the estimated cost of each and the source of the funds.
9	**Justification — Attach** any documents to which you refer in Section II-B.

GIS: ENVR 241

Fall 2021

Instructor: Robert C. Burke
Office: Onstead Science Center 145E
Phone: 903-452-6780
Email: rcb11b@acu.edu

Office Hours: By appointment

Lecture and Laboratory: Thursday 6:00PM-8:50PM, Onstead Science Center 242

Course Description: 3 semester hours, 1 hour lecture and 2 hours lab per week. The course will introduce specific approaches to applications of Geographic Information Systems (GIS) to natural resource analysis, and fundamentals of geographic data discovery, cataloging, management, and display. There are no Prerequisites. The course is targeting students within natural resource fields of study at a sophomore level.

Contact expectations: Office hours are by appointment. Email is preferred and contact information must be left if leaving a message or texting. I will respond to all calls, texts and emails within 24 hours.

Mission Statements

ACU Mission: The mission of Abilene Christian University is to educate students for Christian service and leadership throughout the world.

College Mission: The College of Arts and Sciences endeavors to educate students for worldwide Christian service and leadership through programs of study and other learning experiences that blend a liberal arts education with professional and career education. The college offers a broad spectrum of programs in the arts, humanities, social sciences, behavioral sciences, natural sciences, and mathematics as well as professional and pre-professional programs. Many courses in the college are designed to provide a unique liberal arts education from a Christian perspective to students of all majors throughout the university.

Department Mission: The mission of the Department of Agricultural and Environmental Sciences is to educate students for Christian stewardship of sustainable agricultural and environmental systems throughout the world.

Personal mission statement: My mission is to provide introduction and insight into spatial sciences and professionalism for your future benefit and for the stewardship of natural resources.

Unique Christian Perspective: Our attitudes should be the same as Christ, in that we should humble ourselves when interacting with each other. This involves serving each other for the betterment of ourselves, the class, and in preparation to become professionals in both name and deed.

Course Content

Outline of Lecture topics:

Course Overview: General descriptions on the course structure, content, schedule, and requirement. Introduction to the ArcGIS software, setup, and workflows.
GIS and Computers: Brief history and components of GIS, fundamentals of the computer and its relationship to GIS.
Terms: Definitions for tools and concepts used within GIS
ArcGIS Overview: The architecture of ArcGIS including desktop, mobile, server, and online platforms and their extensions.
GIS Databases: The different types of GIS data including spatial data vs. attribute data, georelational model vs. object-based model, vector data vs. raster data, and neutral data formats.
Projection and Coordinate System: The concepts of datum and spheroid, the different methods of map projection, the difference between geographic coordinate system and projected coordinate system, and commonly used projected coordinate systems.
Map Design: The different types of maps, essential elements of a complete map, symbolization on qualitative data and classification on quantitative data, and cartography conventions.
Data Acquisition and Editing: Information associated with GIS data acquisition, different GIS data sources and ways of data delivery, edits on spatial and attribute data, and error detection and accuracy assessment.
Data Update: Data update by adding new features or modifying existing features, data update within a dataset or between datasets.
Feature Selection and Extraction: Selection by spatial features or by attributes, manual selection or selection through query, interactive selection, and selection by location.
Proximity and Overlay Processes: Proximity analysis through buffering, and different tools for overlay analysis.
Join and Relate: The concept of relational database management, different types of relationship and attribute join vs. spatial join.
Raster Data Analysis: Raster data structure, georeferencing images, digital elevation model and triangulated irregular network, spatial interpolation, terrain mapping and analysis, and zonal statistics.
Trends, Opportunities and Challenges: Current and future utilization of mapping and geographical analysis.

Outline of Laboratory topics:

Introduction ArcGIS: Basic navigation of ArcMap including: layers window, views, exploring data, attributes and adding data.
Projections: explore map projections and grid systems.
Symbology: manipulating cartographic functions, area fills, color, etc.
Tables: attribute data exploration and manipulation
Heads-up Digitizing: georegister and georeference images, create geodatabase, digitize features, and editing.
Accuracy Assessment and GPS Tutorial: Field work for raw data collection, application, and accuracy corrections.
Vector Analysis: Selection of features, data analysis and manipulation using specific tools.
Raster Analysis: Introduction to basic raster-based analysis using specific functions and tools.
Interpolation with Spatial Analyst: Techniques and surface comparisons using specific tools.

Format of Class: Each class will be three hours on a Thursday evening. The first hour will consist of taking attendance, turning in essays, and a lecture. The second and third hours will be lab time consisting

software instruction and a lab assignment (due before next class). Time will be set aside on scheduled days for a midterm exam, final exam, and project presentations. A fifteen minute break will follow the lecture.

Instructional Materials

Textbook: *Required*: Wing, M. G. and Bettinger, P. Geographic Information Systems: Applications in Natural Resource Management, 2nd Edition, Oxford, ISBN 9780195426106.
Link to the campus library: http://www.campusstore.acu.edu/home.aspx

Software: Esri ArcGIS Desktop 10.4.1 with the Advanced (ArcInfo) license level. Math lab is available until midnight.

Additional materials, instrumentation, and supplemental readings will be provided.

Learning Outcomes

Course goal: Geographic Information System (GIS) is a computer system for capturing, storing, querying, analyzing, and displaying geographically referenced data. It has become commonplace in a multitude of disciplines. This class outlines the principles of GIS and is designed to provide basic knowledge of GIS theory and application. Issues of data acquisition and the use of GIS for real-world applications are emphasized. ENVR 241 is one of the required courses for Environmental Science majors, and thus competency is required. The course is designed to address applications of ecology, biology, policy, economics, and administration of agricultural and environmental science at intermediate level, as well as understanding the competency of resource measurement, management and oral and written communication skills at advanced level.

Competencies: Students will

1. demonstrate competency in basic concepts and principles of GIS theory; map design, spatial data collection storage, format, and editing; spatial analysis. This will be achieved through the reading, writing, and testing of lecture materials.
2. demonstrate the ability to use GIS software. This will be achieved through laboratory instructions and assignments.
3. demonstrate professional ethics through use of validated data and professional or peer-reviewed references.
4. demonstrate competency in oral and written communication skills through writing, project preparation and presentation.

Assessment and Grading

Lab Assignments: Lab assignments will be given following each laboratory period. Students will be given opportunity to start assignments during class. Each assignment will be due before the following class. Ten lab assignments will be given, each worth 30 points. Assignments can be e-mailed to instructor using the following file name convention: Lab#_Map#_firstname_lastname_class. Time will be given at the end of class to begin assignments and discuss issues.

Essays: Ten 500 word essays will be assigned. The topic for each essay will be provided. Each will be due before the following class meeting. Each essay must be in word compatible format and submitted via email to instructor using the following file name convention: Essay_#_firstname_lastname_class.

Exams: A midterm and final exam will be offered. They will be a combination of short answer and essay questions. Both exams will be over the material covered up to each test (comprehensive). Each will be worth 100 points.

Class Project: Each student will be assigned a class project in which they will develop a poster comprised of a map or maps created using ArcGIS. An abstract explaining the project will be due prior to presentation. Abstract should include the following:
1. Title: i.e., main idea.
2. Purpose: a 250 word description of the purpose(s), why the project is needed, the major problem it resolves, and the expected users and benefits.
3. Data: what data have been used.
4. Output map(s) to be used on poster.
The poster, presentation and report (1500 word minimum, 2000 word maximum, double spaced) are due right after the presentation. Also the poster, ppt and doc file should be submitted to the instructor during the last class. More detailed guidelines and requirements on class projects will be provided in class. Students are encouraged to freely discuss their project ideas with the instructor. During the last scheduled lab period, students will present their project to the class. The presentations can be no longer than fifteen (15) minutes and should use PowerPoint.

FYI: Learning GIS is fun, but it is time consuming. Time management is critically important for this class. Be prepared for long hours of hard work. You are supposed to get frustrated before you finally taste the fruit. Expect yourself becoming a GIS specialist beyond an operator.

Assessment Activities	Grades Possible	Weighting
Attendance	100	10%
10 Lab Assignments (30 points each)	300	30%
10 Essays (20 points each)	200	20%
Mid-term exam and final exam (100 each)	200	20%
Class Project and Presentation (200 points)	200	20%
Total	1000 (without bonus)	100%

Final grade calculation:

Range of Points	Final Letter Grade
90%-100%	A
80%- 89%	B
70%-79%	C
60%-69%	D
Below 59%	F

University Policies

ADA Compliance Statement: Abilene Christian University is dedicated to removing barriers and opening access for students with disabilities in compliance with ADA and Section 504 of the Rehabilitation Act. The Alpha Scholars Program facilitates disability accommodations in cooperation with instructors. In order to receive accommodations, you must be registered with Alpha Scholars Program, and you must complete a specific request for each class in which you need accommodations.

If you have a documented disability and wish to discuss academic accommodations, please call our office directly at (325) 674-2667 or email at alpha@acu.edu.

Academic integrity: Academic integrity is defined as academic work completed as assigned for each class by the individual or group responsible for the work. Violations of academic integrity and other forms of cheating involve the intention to deceive, mislead, or misrepresent and therefore, are a form of lying. Such actions are contrary to behavioral norms that flow from the nature of God. Academic misconduct includes, but is not limited to, the following: 1) Failure to give credit to sources used in a work in an attempt to present the work as one's own, 2) Submission of papers or projects obtained from another source (e.g., research service or club paper file) as one's own, and 3) Falsifying information orally or in writing. Academic misconduct may result in, but is not limited to, a zero on the assignment and/or an F in the course. Additionally, the department chair, Dean of your school, and the Dean of Student Life will be notified. See the full university policy, including how to appeal a decision, by following this link.

Harassment policy: Consider adding the following text from the harassment policy of ACU: "As a Christian community, Abilene Christian University has committed itself, unequivocally, to ensuring a working and learning environment in which the dignity of every individual is respected. Harassment is defined as unwelcome behavior or conduct based on sex, religion, race, age, color, national origin, veteran's status, disability, or any other characteristic protected by law when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, education, or participation in University programs or activities, (2) submission to, or rejection of, such conduct by an individual is used as the basis for a decision affecting an individual's employment, education, or participation in University programs of activities, or (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive environment for work, education, or participation in a University program or activity. See the full university policy by following this link.

Refer to the ACU student handbook for additional information on decorum and misconduct policies.

Course Policies

Attendance: Attendance is mandatory. This is due to the limited number of classes and the duel composition of lecture and laboratory for each. Any absence must be discussed before a missed class for exams and/or assignments to be offered or accepted. Quizzes will not be made available if absent or tardy. University related absences must be addressed prior to absence in order to obtain credit and class information.

Tardiness: If you are late, you will be marked as such for attendance. Tardiness will also result in missed quizzes, lost opportunity to turn in essays and assignments, and lost class information. Quizzes will not be offered late.

Participation : Assigned readings must be completed before lecture for essay preparation. Attendance will be monitored at the beginning of class prior to lecture and at the end of class after laboratory exercise.

Responsible Use of Technology: It is expected that all students will only use cell phones, PDAs, laptop computers, MP3 players, and related devices outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop for matters unrelated to the course may be grounds for dismissal from class or other penalties.

Food and Drink: Food and/or drinks will **not** be allowed in class in order to protect computer lab equipment. Breaks will be given after lecture and lab.

Late assignment/exam: Late assignments, essays, quizzes, presentations and exams will not be accepted or offered.

Calendar

Week/Day	Lecture Topic	Reading Materials	Laboratory Topic	Assignments and Exams*
Week 1 8/29/19	GIS Terms and Computers	Chapter 1	Introduction to GIS Lab	Essay 1 Assignment 1
Week 2 9/5/19	GIS Databases	Chapter 2	Projections	Essay 2 Assignment 2
Week 3 9/12/19	Field Visit - Cedar Creek Waterway	Chapters 3 & 4	Accuracy Assessment and GPS Field work	Essay 3 Assignment 3 (60pts) ➢ Project Abstract ➢ GPS exercise
Week 4 9/19/19	GIS Databases And Map Design	Chapters 5 & 6	Symbology	Essay 4 Assignment 4
Week 5 9/26/19	Feature Selection and Extraction	Chapters 7 & 8	Tables and Heads-up Digitizing	Essay 5 Assignment 5
Week 6 10/3/19	Data Acquisition and Editing	Chapters 9 & 10	Project Discussion	
Week 7 10/10/19				**Midterm Exam**
Week 8 10/17/19	Join and Relate	Chapter 11	Vector Analysis	Essay 6 Assignment 6
Week 9 10/24/19	Overlay	Chapter 12	Geoprocessing Vector Data	Essay 7 Assignment 7 (60pts)
Week 10 10/31/19	Raster Data Analysis	Chapter 13	Geoprocessing Vector Data	Essay 8 Assignment 8
Week 11 11/7/19	Trends in GIS	Chapter 14	Class Project	Essay 9
Week 12 11/14/19	Challenges and Opportunities	Chapter 15, 16 & 17	Class Project	Essay 10
Week 13 11/21/19			Class Project	
Week 14 11/28/19	No Class		Thanksgiving	
Week 15 12/5/19				**Class Project Presentations**
Week 16 12/12/19				**Final Exam**

*Normal text is due before the following class period (week/date). Bold text is held on the day of class

period (week/date).

Instructor reserves the rights to modify the calendar and syllabus.

ABILENE CHRISTIAN UNIVERSITY

LIBRARY

M E M O R A N D U M

DATE: December 3, 2019

TO: Dr. Jim Carpenter

FROM: Mark McCallon, Associate Dean for Library Information Services

RE: Course Application for ENVR 241- Geographic Information Systems

After reviewing the course application and syllabus, the library can adequately support the proposed course. Thank you for letting us review the course application and syllabus.

September 2, 2019

Professor Robert C. Burke
Onstead Science Center 145E
Rcb11b@acu.edu
903-452-6780

Re: Review of ENVR440

Dear Professor Burke,

Thank you for submitting ENVR440: GIS to us for a review. I have reviewed it based on the ACU Syllabus Guidelines. I found the syllabus to meet all requirements in an exemplary way, except two items that might need some attention:

- Please make sure that there is a way to show how assignments or instruments match learning objectives and competencies
- Please replace the contact information for ADA, as Dr. Self is working in this capacity. Check the syllabus template for further information.

You could add these items in the document to be submitted further to the council, and there is no further need to bring it back to the Adams Center for further review. We appreciate you working with us in the review process.

Please note that this letter is intended as a reference, which will be read by the department chair and members of the council, who may also have questions or comments of their own.

If you have any questions, please feel free to let me know. Please also let me know if we can be of any help in the design and facilitation of this course.

Director of Instructional Design
Adams Center for Teaching and Learning