Core Curriculum Course Proposal

Course Prefix/Number**	GEOL 1347
Course Name	Meteorology
Academic Department	Physics and Geoscience

In which Foundational Component Area is the course (refer to the "Core Matrix")?

Foundational Area	Life and Physical Science 030 and Component Area Options – Area B 090

Check all Core Objectives that apply (refer to the "Core Matrix")

_X__ Critical Thinking
_X__ Communication Skills
_X__ Empirical & Quantitative Skills
_X__ Teamwork
____ Social Responsibility
____ Personal Responsibility

LIFE AND PHYSICAL SCIENCES
STUDENT LEARNING OUTCOME ALIGNMENT FORM

Course Prefix/Number: Geology 1347
Course Title: Meteorology
Brief Course Description: An introduction to atmospheric properties, physical processes that govern weather and climate, and interactions between the atmosphere and the other components of the Earth system.

Foundational Component Area: Life and Physical Sciences. Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

*Choose at least one Core SLO from the Core Objective.

Core Objective	ASU SLO	Course SLO	Assignment	Assessment Method
Critical Thinking	CT: Gather, analyze, evaluate, and synthesize information relevant to a question or issue.	SLO1: Analytically examine the phenomena of the solar and terrestrial radiation and understanding the energy transfer by radiation, conduction, and convection, and explain the factors that determine the transport of solar energy over the Earth's surface and describe global distribution of temperature.	Hands-on activities done in class in which students construct charts, and conceptual diagrams based on data and draw conclusions from the results.	AACU Critical Thinking VALUE Rubric *
Communication	CS: Develop, interpret, and express ideas through effective written communication.	SLO2: Students will be able to effectively discuss scientific data and results such as identify and understand clouds and storms of all types and optical features in the atmosphere. The formation of cumulonimbus vs. stratus clouds, the development of mid-latitude cyclones vs. tropical cyclones, and the tropospheric variables that effect these meteorological structures will be explored.	Interactive hands-on based lecture discussion involving the communication via written activity of topics which are defined based on lecture notes.	AACU Written Communication VALUE Rubric *

Empirical & Quantitative Skills	EQS: Manipulate and analyze numerical data and arrive at an informed conclusion.	SLO3: Describe fundamental concepts, theories, and physical laws relevant to how the atmosphere we live in operates. Such topics will include the laws of thermodynamics, conservation of mass, the hydrologic conceptual model, and the wave cyclone theory.	Analysis of numerical data explored during lecture exams via short answer explanations.	AACU Quantitative Literacy VALUE Rubric*
Teamwork	TW: Work effectively with others to support and accomplish a shared goal.	SLO4: Practice applications of weather basics which will be applied to everyday living, thus allowing the student to plan around the dynamic atmosphere's diurnal variability and understand when it is or is not life-threatening.	Hands-on activities done in class in which students work together in groups to complete weather forecasts based on real-time data which describes many variables of the atmosphere.	AACU Teamwork VALUE Rubric *

Association of American Colleges & Universities, *Valid Assessment of Learning in Undergraduate Education (VALUE)*, information & rubrics available at: http://aacu.org/value-rubrics

CRITICAL THINKING VALUE RUBRIC

for more information, please contact value@aacu.org

Association of American Colleges and Universities

Definition

Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone	**Milestones**		**Benchmark**
	4	3	2	1
Explanation of issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

WRITTEN COMMUNICATION VALUE RUBRIC

for more information, please contact value@aacu.org

Association of American Colleges and Universities

Definition

Written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone 4	**Milestones** 3	2	**Benchmark** 1
Context of and Purpose for Writing *Includes considerations of audience, purpose, and the circumstances surrounding the writing task(s).*	Demonstrates a thorough understanding of context, audience, and purpose that is responsive to the assigned task(s) and focuses all elements of the work.	Demonstrates adequate consideration of context, audience, and purpose and a clear focus on the assigned task(s) (e.g., the task aligns with audience, purpose, and context).	Demonstrates awareness of context, audience, purpose, and to the assigned tasks(s) (e.g., begins to show awareness of audience's perceptions and assumptions).	Demonstrates minimal attention to context, audience, purpose, and to the assigned tasks(s) (e.g., expectation of instructor or self as audience).
Content Development	Uses appropriate, relevant, and compelling content to illustrate mastery of the subject, conveying the writer's understanding, and shaping the whole work.	Uses appropriate, relevant, and compelling content to explore ideas within the context of the discipline and shape the whole work.	Uses appropriate and relevant content to develop and explore ideas through most of the work.	Uses appropriate and relevant content to develop simple ideas in some parts of the work.
Genre and Disciplinary Conventions *Formal and informal rules inherent in the expectations for writing in particular forms and/or academic fields (please see glossary).*	Demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific discipline and/or writing task (s) including organization, content, presentation, formatting, and stylistic choices	Demonstrates consistent use of important conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices	Follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation	Attempts to use a consistent system for basic organization and presentation.
Sources and Evidence	Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the discipline and genre of the writing	Demonstrates consistent use of credible, relevant sources to support ideas that are situated within the discipline and genre of the writing.	Demonstrates an attempt to use credible and/or relevant sources to support ideas that are appropriate for the discipline and genre of the writing.	Demonstrates an attempt to use sources to support ideas in the writing.
Control of Syntax and Mechanics	Uses graceful language that skillfully communicates meaning to readers with clarity and fluency, and is virtually error-free.	Uses straightforward language that generally conveys meaning to readers. The language in the portfolio has few errors.	Uses language that generally conveys meaning to readers with clarity, although writing may include some errors.	Uses language that sometimes impedes meaning because of errors in usage.

QUANTITATIVE LITERACY VALUE RUBRIC

for more information, please contact value@aacu.org

Association of American Colleges and Universities

Definition

Quantitative Literacy (QL) – also known as Numeracy or Quantitative Reasoning (QR) – is a "habit of mind," competency, and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone 4	**Milestones** 3	2	**Benchmark** 1
Interpretation *Ability to explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words)*	Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. *For example, accurately explains the trend data shown in a graph and makes reasonable predictions regarding what the data suggest about future events.*	Provides accurate explanations of information presented in mathematical forms. *For instance, accurately explains the trend data shown in a graph.*	Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. *For instance, accurately explains trend data shown in a graph, but may miscalculate the slope of the trend line.*	Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. *For example, attempts to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends.*
Representation *Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)*	Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical portrayal.	Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.
Calculation	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.)	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem.	Calculations attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem.	Calculations are attempted but are both unsuccessful and are not comprehensive.
Application / Analysis *Ability to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis*	Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for workmanlike (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work.	Uses the quantitative analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work.
Assumptions *Ability to make and evaluate important assumptions in estimation, modeling, and data analysis*	Explicitly describes assumptions and provides compelling rationale for why each assumption is appropriate. Shows awareness that confidence in final conclusions is limited by the accuracy of the assumptions.	Explicitly describes assumptions and provides compelling rationale for why assumptions are appropriate.	Explicitly describes assumptions.	Attempts to describe assumptions.
Communication *Expressing quantitative evidence in support of the argument or purpose of the work (in terms of what evidence is used and how it is formatted, presented, and contextualized)*	Uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality.	Uses quantitative information in connection with the argument or purpose of the work, though data may be presented in a less than completely effective format or some parts of the explication may be uneven.	Uses quantitative information, but does not effectively connect it to the argument or purpose of the work.	Presents an argument for which quantitative evidence is pertinent, but does not provide adequate explicit numerical support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities.)

TEAMWORK VALUE RUBRIC

for more information, please contact value@aacu.org

Association of American Colleges and Universities

Definition

Teamwork is behaviors under the control of individual team members (effort they put into team tasks, their manner of interacting with others on team, and the quantity and quality of contributions they make to team discussions.)

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone 4	**Milestones** 3	 2	**Benchmark** 1
Contributes to Team Meetings	Helps the team move forward by articulating the merits of alternative ideas or proposals.	Offers alternative solutions or courses of action that build on the ideas of others.	Offers new suggestions to advance the work of the group.	Shares ideas but does not advance the work of the group.
Facilitates the Contributions of Team Members	Engages team members in ways that facilitate their contributions to meetings by both constructively building upon or synthesizing the contributions of others as well as noticing when someone is not participating and inviting them to engage.	Engages team members in ways that facilitate their contributions to meetings by constructively building upon or synthesizing the contributions of others.	Engages team members in ways that facilitate their contributions to meetings by restating the views of other team members and/or asking questions for clarification.	Engages team members by taking turns and listening to others without interrupting.
Individual Contributions Outside of Team Meetings	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project. Proactively helps other team members complete their assigned tasks to a similar level of excellence.	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project.	Completes all assigned tasks by deadline; work accomplished advances the project.	Completes all assigned tasks by deadline.
Fosters Constructive Team Climate	Supports a constructive team climate by doing all of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.	Supports a constructive team climate by doing any three of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.	Supports a constructive team climate by doing any two of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.	Supports a constructive team climate by doing any one of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.
Responds to Conflict	Addresses destructive conflict directly and constructively, helping to manage/resolve it in a way that strengthens overall team cohesiveness and future effectiveness.	Identifies and acknowledges conflict and stays engaged with it.	Redirecting focus toward common ground, toward task at hand (away from conflict).	Passively accepts alternate viewpoints/ideas/opinions.

Angelo State University
GEOL 1347 Meteorology
Fall 2019

CRN _ Section 050 MWF 10:00-10:50am, Room: VIN 139

Instructor: Jessica A. Garza
Email: jgarza85@angelo.edu
Office hours: VIN 130, MW Noon-1pm or by appointment
Office phone: (325) 486-6987

COURSE DESCRIPTION:

The course provides a through introduction to weather, clouds, atmospheric processes, ocean waves and climate that affect our world. This is an introductory, first course in meteorology for students pursuing degrees in science, engineering, technology, for teaching/education or related career fields, and for the weather enthusiast that wants to understand weather and how storms form and move. This is a non-mathematically-based course that places emphasis on the descriptive side of fundamental atmospheric principles, what the atmosphere is made of, why it is important to life, defining atmospheric air motions and cloud formations through descriptions of the various storm-types, their evolution and their impacts on society. The basics of how and why seasons occur on Earth, how the atmosphere gets and uses energy to move and how weather is forecast will be clearly and vividly provided.
Co/Pre-requisite: none.

REQUIRED MATERIALS:

- ✓ TEXTBOOK: *Essentials of Meteorology: An Invitation to the Atmosphere, 7th Ed C. Donald Ahrens.*
- ✓ ASU email account that you check regularly
- ✓ Blackboard course site at ASU Blackboard.

ATTENDANCE POLICY: You are expected to attend all scheduled class meetings. Missed lecture activity points CANNOT be made up. Please inform me well ahead of time if you will need to be absent for any reason including religious holidays. NOTE: You are NOT automatically dropped if you stop attending class. November 2 is the last day to drop a course.

STUDENT LEARNING OUTCOMES: This course is designed to familiarize the student with the processes, principles, and theories involved in Physical Geology. Learning outcomes will be evaluated by homework, lab assignments, quizzes, and exams. At the end of this course, the student will be able to:

1) Analytically examine the phenomena of the solar and terrestrial radiation and understanding the energy transfer by radiation, conduction, and convection, and explain the factors that determine the transport of solar energy over the Earth's surface and describe global distribution of temperature.

2) Identify and understand clouds and storms of all types and optical features in the atmosphere. The formation of cumulonimbus vs. stratus clouds, the development of mid-latitude cyclones vs. tropical cyclones, and the tropospheric variables that effect these meteorological structures will be explored.
3) Describe fundamental concepts, theories and physical laws relevant to how the atmosphere we live in operates. Such topics will include the laws of thermodynamics, conservation of mass, the hydrologic conceptual model, and the wave cyclone theory.
4) Practice applications of weather basics which will be applied to everyday living, thus allowing the student to plan around the dynamic atmosphere's diurnal variability and understand when it is or is not life-threatening.
5) Have a clear understanding of how weather is forecast and why some weather quantities are far easier to forecast than others.
6) Acquire hands on experience with weather observations and be able to visit a National Weather Service office where forecasting is performed around the clock.
7) Learn specific tools to help them communicate better ideas and concepts that may be abstract to others, thus they will be able to easily share learned knowledge from this course with others.
8) Clearly understand our complex atmosphere and the many constantly change weather features within it.

CORE CURRICULUM STUDENT LEARNING OUTCOMES: The following list of core curriculum student learning outcomes will be met and measured during this course.

Student Learning Outcome	Assessment Method
1. Gather, analyze, evaluate, and synthesize information relevant to a question or issue.	In-class Activities
2. Develop, interpret, and express ideas through effective visual communication.	Quizzes and Exams
3. Manipulate and analyze numerical data and arrive at an informed conclusion	Homework/In-class Assignment
4. Manipulate and analyze observable facts and arrive at an informed conclusion	Take-home Assignments
5. Work effectively with others to support and accomplish a shared goal.	In class assignments

LECTURE: A typical class meeting will combine lectures, discussions, group activities, multimedia presentations, and other demonstrations and activities to give you an opportunity to learn concepts in as active a manner as possible.

CELL PHONES AND OTHER ELECTRONIC DEVICES: You may use a laptop or tablet to take notes during class. Please do not disturb others with their use. Please keep all electronics on vibrate or on silence. The use of any electronic device not authorized by the instructor during a test may result in the forfeiture of your grade for that test. All electronic devices should be turned off and stored out of sight during tests.

GRADING:

HW Assignments	10%
3 Lecture Exams (% each)	60%
1 Final Comprehensive Exam	20%
In-class Activities	10%

There will be no make-ups for homework, in-class activities, or quizzes. Make-up exams will be given for tests ONLY under extenuating circumstances. Prior email notification is needed for a make-up exam.

GRADING SCALE:

100-90=A; 89-80=B; 79-70=C; 69-60=D; 59 and below=F

CLASS PREPARATION ASU EMAIL: Since class announcements will be routinely distributed via email and Blackboard, you will need to regularly check your ASU email account and our course Blackboard site (daily). All course correspondence will be through your ASU email account and Blackboard. ASU provides Internet and email services to you at any of the computer labs on campus. Call 942-2911 to set this up if necessary.

KNOW THE ASU HONOR CODE: Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook.

STUDENTS WITH DISABILITIES: ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation. The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by contacting: Ms. Dallas A. Swafford, Director of Student Disability Service, 325-942-2047, dallas.swafford@angelo.edu, Houston Harte University Center.

TITLE IX: Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU's Title IX Coordinator: Michelle Nicole Boone, J.D., Director of Title IX Compliance, 325-486-6357, michelle.boone@angelo.edu, Mayer Administration Building 204A

INCOMPLETE GRADE POLICY: It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

STUDENT ABSENCE FOR OBSERVANCE OF RELIGIOUS HOLY DAYS: A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.

ACADEMIC INTEGRITY: Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU. The College of Science and Engineering adheres to the Statement of Academic Integrity

PLAGIARISM: Plagiarism is a serious topic covered in ASU's Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft. In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list. Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

COPYRIGHT POLICY: Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

GENERAL POLICIES RELATED TO THIS COURSE: All students are required to follow the policies and procedures presented in these documents:

- Angelo State University Student Handbook
- Angelo State University Catalog

GEOLOGIC EXHIBITION ORGANIZATION (GEO):
GEO, the student organization of all interested in geology (not just majors/minors), meets almost every Wednesday @ 6:00PM. GEO is a student chapter of the American Association of petroleum Geologists. Sigma Gamma Epsilon, the national honor society of the earth sciences is related to GEO.

YOU CAN MAJOR OR MINOR IN GEOLOGY @ ASU! See the BS in Geoscience requirements. A Geology Minor requires 18 hours of geology courses. Good and rewarding careers exist for geologists, geophysicists, hydrogeologists, secondary science teachers, and petroleum engineers.

FINAL NOTE:
It is my goal to make this class both interesting and informative for you. With a reasonable amount of effort, it should be possible for everyone to meet the course objectives and earn a passing grade. With additional effort, aptitude, and investment of time, students may earn even higher course grades. If at any time you run into difficulties with the material, or need assistance or clarification, please do not hesitate to ask for help. I am here for you, and I will be glad to entertain any reasonable requests.

SCHEDULE: *All information is subject to change.*

DATE	**TOPIC**	**TEXT CHAPTERS**
Tue Aug 30	Earth's Atmosphere	Chapter 1
Thu Sep 01	Sun/Heat/Hydrologic Cycle	Chapter 2
Tue Sep 06	Air Temperature	Chapter 3
Thu Sep 08	Humidity & Condensation	Chapter 4
Tue Sep 13	Clouds & Precipitation	Chapter 5
Thu Sep 15	Clouds & Precipitation	Chapter 5
Tue Sep 20	Air pressure	Chapter 6
Thu Sep 22	Wind	Chapter 6
Tue Sep 27	Wind Scales	Chapter 6
Thu Sep 29	**TEST 1**	--
Tue Oct 04	Atmospheric Circulations	Chapter 7
Thu Oct 06	Air Masses	Chapter 8
Tue Oct 11	Mid-latitude Cyclones	Chapter 8
Thu Oct 13	Fronts	Chapter 8
Tue Oct 18	Thunderstorms	Chapter10
Thu Oct 20	Thunderstorms	Chapter 10
Tue Oct 25	Tornadoes	Chapter 10
Thu Oct 27	Tornadoes	Chapter 10
Tue Nov 01	**TEST 2**	--
Thu Nov 03	Tropical Weather	Chapter 11
Tue Nov 08	Hurricanes	Chapter 11
Thu Nov 10	Hurricanes	Chapter 11
Tue Nov 15	Weather Forecasting	Chapter 9
Thu Nov 17	Weather Forecasting	Chapter 9
Tue Nov 22	**TEST 3**	
Thu Nov 24	**THANKSGIVING HOLIDAY**	
Tue Nov 29	Marine Weather-Waves	Steve Notes
Thu Dec 01	Rainbows & Atmospheric Optics	Chapter 15
Tue Dec 06	Global Climate	Chapter 13
Thu Dec 08	Earth's Changing Climate	Chapter 12
Tue Dec 13	**FINAL EXAM COMPREHENSIVE**	Exact date/time TBD