CGEIP Tool for Evaluating General Education Courses

INSTRUCTIONS FOR SUBMISSION:
Download form, complete and submit electronically with Oversight Table Grid and with accompanying syllabi as attachments to Peggy Jones (PeggyJones@missouristate.edu) and to Mike Foster, 2010-2011 CGEIP Committee Chair (Mfoster@missouristate.edu).

Course: GRY 142 Intro. to Physical Geography **Review Date:** Semester Spring Year 2011

Department Head and/or other authors: Dr. Mario Daoust (Course Instructor) and Dr. Thomas Plymate (Department Head)

Course instructors, including lab instructors, adjuncts, etc. for all sections the last time it was taught. (Add lines as needed.)

Sect.#	Names of instructors/person(s) responsible for course	Year Taught	Title/Rank	√ if Syllabus attached.
Lecture A	Mario Daoust	FA10	Asst. Prof.	X
Lab 1	Heather Grootens	FA10	GTA	X*
Labs 2, 4, 301	Nicholas Vail	FA10	GTA	X*
	*all lab sections use the same syllabus provided by the lecture instructor			

Department heads should use this form to respond to each of the following criteria. CGEIP reviewers will use this document to evaluate the materials.

1. Department Head and/or Author's Summary
Respond to each of the following items in the expandable gray box provided below each.

a. Give an overview or description of how the course contributes to the aim and goals of the Missouri State General Education Program.

Response:

GRY 142 is a course of the General Education program that focuses on the understanding of the natural world. The course initiates students to the basic laws that govern environmental systems on Earth. It examines the interconnectedness of the physical factors generating the global ecosphere, and addresses man-made effects that can influence the natural world. Students are exposed to the complexity of the natural world and are introduced to issues such as environmental equilibrium processes, feedback mechanisms, etc… GRY 142 examines how physical geography has evolved as a science, and surveys current theories on environmental changes. The course also initiates students to various qualitative and quantitative tools used in physical geography. Finally, GRY 142 demonstrates that in the context of natural disasters, culture can play an important role on how a community reacts in face of environmental adversity.

b. Describe how the department ensures that all faculty teaching the course, including per course and teaching assistants, understand and incorporate the General Education goals in their sections as reflected in their Syllabi.

Response:

There is only one lecture section for this course. Dr. Daoust has been responsible for the lecture section since 2002. General Education goals pertinent to the course are clearly identified in the lecture course syllabus. Regarding the laboratory sections, regular meetings between Dr. Daoust and Graduate Assistants responsible for the lab sections ensure that general education goals, as listed in both lecture and laboratory syllabi, are followed.

c. Describe any other changes in the course during the past three years and why they were made. If you anticipate any future modifications, explain what and why.

Response:

No major change has been made to this course since the last revision. Course syllabi have been revised to clearly stress general education goals. As well, assessment surveys have been revised and improved.

d. Describe how the course's **assessment results** have been used to ensure that the course meets the General Education Goals.

Response:

Assessment results (Survey I- week 1, and Survey II – week16) have demonstrated that the course meets General Education goals. Pre-test and Post-test have demonstrated that students can make a substantial progress during the sixteen weeks of the course. Results from these tools have led to the tweaking of several labs, and a few lectures.

2. Syllabi/Policy Statements

In each policy statement/syllabus highlight in yellow the General Education Component and subcomponent (e.g., Basic Required Skills, Areas of Inquiry [Natural World, Culture and Society, Self-Understanding], or Public Affairs) areas addressed in the course. In the box below, include a listing of the General Education goals found in the policy statement or syllabus and common to each section. (You may cut and paste from the syllabi.)

Response:

General Educational Goals Part 1-B2: ***Information-Gathering, Reasoning, and Synthesizing Abilities – Knowing how and when to make generalizations and value judgments.*** GRY 142 introduces students to the cyclical nature of geosystems, their interpretation, and to disagreements amongst scientists regarding how future environmental changes might progress. GRY 142 encourages students to develop their own opinions on environmental issues based on current accepted theories and issues discussed in class.

General Educational Goals Part 1-B4, B5: ***Information-Gathering, Reasoning, and Synthesizing Abilities – Skill in making deductive inferences (B4), and Ability to use relevant quantitative methods (B5).*** GRY 142 is designed to teach the general education student skills in making deductive inferences and to learn relevant quantitative methods used by physical geographers to explore and model the phenomena they observe (e.g., climograph, soil water budget, etc…).

*General Educational Goals Part 1- C1, C2****: Reflective, creative and critical dispositions. – Striving to be well informed and open-minded (C1), and Looking for multiple possibilities and being able to deal with ambiguity(C2).*** GRY 142 is aimed at increasing the degree of awareness of students to environmental issues, exposing the complex nature of geosystems, and allowing students to develop a well-informed, open-minded critical approach on matters relevant to environmental processes.

General Educational Goals Part 2-A1: ***Understanding of the Natural World – Knowledge of the physical universe (in this case, Planet Earth) including its origin and the physical laws governing it.*** GRY 142 analyses each physical realm of the Earth: atmosphere, hydrosphere, lithosphere and biosphere. GRY 142 examines the complex interconnectedness between each physical component, and the physical laws governing Earth's global geosystem.

General Educational Goals Part 2-A3: ***Understanding of the Natural World – Understanding the history and methods of scientific inquiry and alternative explanations of the natural world.*** GRY 142 seeks to inform students about changes that have affected physical geography as a science throughout history. It also presents qualitative and quantitative methods used by geographers.

General Educational Goals Part 2-A5: ***Understanding of the Natural World - Develop an understanding of the ways human choices affect the earth and living systems and the responsibilities of individual citizens and communities to preserve global resources.*** GRY 142 explores the concept of global change by examining several processes that shape the physical environment, both natural and human induced. Issues such as global warming and deforestation are analyzed, and their consequences on the living environment examined.

General Educational Goals Part 2-B1a: ***Understanding Culture and Society - Understanding the unique shared ways of thinking, believing, and acting, developed by a people who live together over a long period of time.*** In the context of natural disasters**,** GRY 142 demonstrates that culture plays an important role on the way a community reacts when facing adverse environmental circumstances (e.g., earthquake, volcanism, drought, tsunami, hurricane landfall, etc…).

3. General Education Oversight Table

Complete the CGEIP Oversight Table showing how the goals of all course sections under review are linked to specific goals of Missouri State University's General Education program.

Instructions: When filling out the table, departments should include only course goals that are closely linked to the University's General Education goals. No General Education course is likely to address each one of the University General Education goals in the table. Other goals that are appropriate to the course but NOT germane to General Education do not need to be included in the Oversight Table.

4. **Assessment Plan**

All departments must have procedures in place (an assessment plan) to determine how the course addresses the Aim and Goals of General Education. The assessment tool(s), data and/or **results of the assessment plan are not required to be included** in the CGEIP review packet.

Note: Although student evaluations and course assessment may be closely aligned, CGEIP's focus is on **course** assessment. Departments must develop and implement strategies that will assess the effectiveness of the course in fulfilling its declared General Education goals. The information generated by this plan should then be used to help improve the course. Those departments needing help with assessment strategies should contact the Director of the Center for Assessment.

Provide this information on the *General Education Oversight Table* document and submit electronically with this form and the attending syllabi.

5. **Enrollment Data**

CGEIP will review enrollment data to determine whether sufficient interest and enrollment exists to continue the course in the General Education Program. Provide course enrollment data by semester for the past three years. Indicate the semester taught and the number of students enrolled.

Year	Spring	Summer	Fall	Annual Total
2008	113		94	207
2009	69		96	165
2010	77		74	151

6. **Final Checklist**

__X___ All required sections of this CGEIP Evaluation Tool have been completed.

__X___ General Education Review/CGEIP Oversight Table is complete.

__X___ All related Syllabi are attached.

__X___ Department Head and/or other author signatures have been included below.

__X___ Date of submission is included below.

Department Head (type) _Dr. Thomas G. Plymate_ **Date** __December 1, 2010__

Signature _____ √ if sent electronically _X_

Other author(s) (type) _Dr. Mario Daoust_ **Date** __December 1, 2010__

Signature(s) ***Mario Daoust*** √ if sent electronically _X_
(Add lines as needed.)

Thank you for your participation in the General Education Program
and your cooperation in our evaluation process.

CGEIP Oversight Table Grid

For more details and exact wording of General Education Program and Requirements, see http://www.missouristate.edu/generaleducation

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Course name **GRY 142 Introduction to Physical Geography**

Number of sections **1 lecture section; 4 lab sections**

Names of instructors **Lecture instructor: Dr. Mario Daoust**
Lab instructors: Heather Grootens and Nicholas Vail (both GTA's supervised directly by Dr. Daoust)

CGEIP Goals (This column lists ALL of them. In the columns to the right address only those that apply to your course.)	List the entire wording of the corresponding course goals common to all sections as listed in the syllabi.	Describe the assessment measure for each course Gen. Ed. Goal (at least 3). (Ex. pre-test/post-tests, quizzes, exams, etc.).	Who carries out each assessment (Ex. course instructor, program director, etc.)?	When is each assessment performed (Ex. end of semester, once a year, etc.)?
Part I Goals (You do not have to address all of these)				
A. Conceptual and Practical Understanding of Modes of Learning, Problem-Solving and Creative Inquiry				
B. Information-Gathering, Reasoning, and Synthesizing Abilities				
1. Skill in formulating questions and in setting goals for inquiry				
2. Knowing how and when to make generalizations and value judgments	GRY 142 introduces students to the cyclical nature of geosystems, their interpretation, and to disagreements amongst scientists regarding how future environmental changes might progress. GRY 142 encourages students to develop their own opinions on environmental issues based on current accepted theories and issues discussed in class.	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester
3. Skill in generating and evaluating observations and evidence				
4. Skill in making deductive inferences	GRY 142 designed to teach the general education student skills in making deductive inferences and to learn relevant quantitative methods used by physical geographers to	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester

	explore and model the phenomena they observe (e.g., climograph, soil water budget, etc…).			
5. Ability to use relevant quantitative methods	GRY 142 is designed to teach the general education student skills in making deductive inferences and to learn relevant quantitative methods used by physical geographers to explore and model the phenomena they observe (e.g., climograph, soil water budget, etc…).	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester
C. Reflective, Creative, and Critical Dispositions				
1. Striving to be well-informed and open-minded	GRY 142 is aimed at increasing the degree of awareness of students to environmental issues, exposing the complex nature of geosystems, and allowing students to develop a well informed, open-minded critical approach on matters relevant to environmental processes.	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester
2. Looking for multiple possibilities and being able to deal with ambiguity	GRY 142 is aimed at increasing the degree of awareness of students to environmental issues, exposing the complex nature of geosystems, and allowing students to develop a well informed, open-minded critical approach on matters relevant to environmental processes.	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester
3. Striving to achieve one's best with persistence and imagination				
4. Willingness to make choices and to evaluate those choices				
5. Intellectual self-awareness: being conscious of one's own thinking process, including the cultural and social contexts of that thinking				
D. Communication Skills				
1. Writing and speaking with clarity and precision for diverse audiences				
2. Making use of computers ad other technological tools				

3. Interpreting and communicating visual information				
Part 2 Goals (address your area and others that may apply)				
A. Understanding of the Natural World				
1. Knowledge of the physical Universe, including its origin and the physical laws governing it.	GRY 142 analyses each physical realm of the Earth: atmosphere, hydrosphere, lithosphere and biosphere. GRY 142 examines the complex interconnectedness between each physical component, and the physical laws governing Earth's global geosystem.	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester
2. Knowledge of living systems, including their nature, organization, and evolution.				
3. Understanding the history and methods of scientific inquiry and alternative explanations of the natural world.	GRY 142 seeks to inform students about changes that have affected physical geography as a science throughout history. It also presents qualitative and quantitative methods used by geographers.	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester
4. Understanding the multiple influences on scientific inquiry and the consequences of science and technology.				
5. Understanding the ways human choices affect the earth and living systems and the responsibilities of individual citizens and communities to preserve global resources.	GRY 142 explores the concept of global change by examining several processes that shape the physical environment, both natural and human induced. Issues such as global warming and deforestation are analyzed, and their consequences on the living environment examined.	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester
B. Understanding of Culture and Society				
1. Knowledge of the many expressions of culture, including: a. Understanding the unique shared ways of thinking, believing, and acting, developed by a people who live together over a long period of time.	In the context of natural disasters, GRY 142 demonstrates that culture plays an important role on the way a community reacts when facing adverse environmental circumstances (e.g., earthquake, volcanism, drought, tsunami,	Assessment Survey I Assessment Survey II Pre-test Post-test	Dr. Daoust Dr. Daoust Dr. Daoust Dr. Daoust	Wk 1 each semester Wk 16 each semester Wk 1 each semester Wk 16 each semester

	hurricane landfall, etc…).			
b. Ability to conceptualize and trace the influences of community, institutions, and other constructions such as class, gender, and race				
c. Familiarity with the ways in which culture is expressed artistically, through literature, performance, and artifact				
d. Awareness of and appreciation for the ways in which culture and society influence and are influenced by work and leisure				
2. Understanding the sources and expression of diverse values throughout the world, including ethical, religious, aesthetic, political, and economic values as well as social and cultural priorities.				
3. Ability to trace the impact of technology on societies and cultures for diverse audiences.				
4. Understanding the ways human choices affect communities, from local to global, and responsibilities of individuals to assume the duties of citizenship.				
5. Understanding the role of government regulation and of legal requirements, political processes, and financial and economic influences on decisions of individuals and society.				
C. Self-Understanding				
1. Understanding the nature of our humanness and how human beings are like and different from the other beings with whom they share the planet.				
2. Knowledge of individual physical, emotional, intellectual, social and creative development as well as ability to use such knowledge to improve personal well-being.				
3. Knowledge of individual physical, emotional, intellectual, social, historical, spatial, and cultural matrices into which the individual is born; and the influence of the unique set of experiences which the individual encounters.				
4. Ability to perceive one's own being not only from cognitive perspectives but also from those perspectives				

which come from exposure to and creative vision of the arts – to imagine the possibilities the future holds and to develop responsible goals for interactions with others, modes of personal expression, and roles in improving the world.				

POLICY STATEMENT

Missouri State University

DEPARTMENT OF GEOGRAPHY, GEOLOGY AND PLANNING

GRY 142: Introduction to Physical Geography
Section: A MWF 10:45 - 11:35 a.m. (Temp 0003)

Dr. Mario Daoust
Office: Temple 367A
Phone: 836-5301
e-mail: MarioDaoust@missouristate.edu

Office Hours: M W 1:30 - 3:30
F 1:00 - 2:00
or by appointment

Fall 2010

CATALOG DESCRIPTION:

GRY142 Introduction to Physical Geography. 4 (3-2) F, S

General Education Course (Natural World). A study of the earth's natural systems including weather and climate, rocks and minerals, landforms and processes of landform development, biogeography, water resources and soils. Map fundamentals and the interrelationships of the geographic factors of the natural environment are emphasized. Students who take GRY 240 and GRY 142 may receive credit for only one of these courses.

Required Textbook:

Christopherson, R.W., (2008). Geosystems: An Introduction to Physical Geography, 7th Edition, Pearson/Prentice-Hall, 687p.

This textbook is a reference manual for the course. The lectures presented in class will be based on several textbooks and on material from other sources. ***It is essential that you take notes during the lectures.***

Course Objectives:

The main purpose of this course is to explore the physical environment of the earth and the interactions within and between the atmosphere, the hydrosphere, the lithosphere and the biosphere. Using a system approach, this course establishes the links between process, form, and effect. At the end of this course, students should be able to look at the natural world as a series of systems, comprehend the relationship between the different physical components of the earth, and understand the vital role played by the flows of matter and energy in this global environmental system.

CGEIP Goals

GRY 142 (Introduction to Physical Geography) is a General Education course (Natural World) sanctioned by the Committee on General Education and Intercollegiate Programs (CGEIP). ***Below is a short list of some of the CGEIP Educational Goals and how GRY 142 complies with them.***

General Educational Goals Part 1-B2: ***Information-Gathering, Reasoning, and Synthesizing Abilities – Knowing how and when to make generalizations and value judgments.*** GRY 142 introduces students to the cyclical nature of geosystems, their interpretation, and to disagreements amongst scientists regarding how future environmental changes might progress. GRY 142 encourages students to develop their own opinions on environmental issues based on current accepted theories and issues discussed in class.

General Educational Goals Part 1-B4, B5: ***Information-Gathering, Reasoning, and Synthesizing Abilities – Skill in making deductive inferences (B4), and Ability to use relevant quantitative methods (B5).*** GRY 142 is designed to teach the general education student skills in making deductive inferences and to learn relevant quantitative methods used by physical geographers to explore and model the phenomena they observe (e.g., climograph, soil water budget, etc…).

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General Educational Goals Part 2-A1: ***Understanding of the Natural World – Knowledge of the physical universe (in this case, Planet Earth) including its origin and the physical laws governing it.*** GRY 142 analyses each physical realm of the Earth: atmosphere, hydrosphere, lithosphere and biosphere. GRY 142 examines the complex interconnectedness between each physical component, and the physical laws governing Earth's global geosystem.

General Educational Goals Part 2-A3: ***Understanding of the Natural World – Understanding the history and methods of scientific inquiry and alternative explanations of the natural world.*** GRY 142 seeks to inform students about changes that have affected physical geography as a science throughout history. It also presents qualitative and quantitative methods used by geographers.

General Educational Goals Part 2-A5: ***Understanding of the Natural World - Develop an understanding of the ways human choices affect the earth and living systems and the responsibilities of individual citizens and communities to preserve global resources.*** GRY 142 explores the concept of global change by examining several processes that shape the physical environment, both natural and human induced. Issues such as global warming and deforestation are analyzed, and their consequences on the living environment examined.

General Educational Goals Part 2-B1a: ***Understanding Culture and Society - Understanding the unique shared ways of thinking, believing, and acting, developed by a people who live together over a long period of time.*** In the context of natural disasters**,** GRY 142 demonstrates that culture plays an important role on the way a community reacts when facing adverse environmental circumstances (e.g., earthquake, volcanism, drought, tsunami, hurricane landfall, etc…).

Course Requirements and Evaluations:

This course has two main components: Lectures and Labs. Evaluation of your progress in this course will be done as follows:

- 1. Lectures: During the semester, you will get three tests in the Lecture Hall covering the material presented during the lectures. Each test will be worth 20% of your final grade. Tests are composed of Multiple Choice/True or False questions.

  Note: *A study guide will be provided for each test.*

  Total: **60 % of your final grade** is based on **Lecture sessions**

- 2. Labs: Lab evaluation will include pop quizzes, tests, and weekly lab assignments. Lab tests and assignments will carry more weight than pop quizzes. A policy statement on the Lab sessions will be provided by your Lab instructor.

  Total: **40% of your final grade** is based on **Lab Sessions**.

  Note: Your lab instructor will give you more information on the format that will be used for the lab tests. As well, your lab instructor will explain to you the rules and grading system used for the lab assignments and quizzes.

Grade Determination:

Your final grade will be based on:

Lecture session - Test #1 (week 6) .....……..…… 20 %
Lecture session - Test #2 (week 11)..……..…… 20 %
Lecture session - Test #3 (week 16)……..…….. 20 %
Lab Sessions ……..……... 40%

Total: 100%

Letter grades will be based on the following percentages for the full term work:

A = 90.0% to 100.0%	A- = 87.0% to 89.9%	B+ = 84.0% to 86.9%
B = 80.0% to 83.9%	B- = 77.0% to 79.9%	C+ = 74.0% to 76.9%
C = 70.0% to 73.9%	C- = 67.0% to 69.9%	D+ = 64.0% to 66.9%
D = 60.0% to 63.9%	F = 0.0% to 59.9%	

Attendance and Make-up Exams

Attendance does not play a role in the overall grading scheme. However, statistics have demonstrated that successful students in this course are those who have a good attendance record. *If, for any reason, you know you cannot attend class regularly and on time each day, please drop the course now.*
Note: On a regular basis, attendance will be recorded in the main lecture room.

Make-up exams will only be allowed if the instructor is notified of the problem prior to the class time. Acceptable absences include university-sanctioned activities, personal illness, or family emergencies. Written verification for your absence is mandatory. **Make-up exams will not be allowed if prior notification is not given.**

Course Assessment

GRY 142 is a General Education course. Like every course in the General Education program, it will be assessed regularly to determine how well it is meeting the aims and goals of the General Education program. Toward this end, you will be required to answer an **Assessment Survey** and **Pre-Test** during the first week of the semester. You will then be required to answer a corresponding **Assessment Survey** and **Post-Test** during the final exam week. Under no circumstance will your performance on either of these assessment instruments have a negative effect on your grade in this course. *However, to give you an incentive to do as well as possible on the **comprehensive Post-Test**, we offer the option of substituting your score on this Post-Test for your score on the lowest of your first two lecture tests (e.g., test#1 or test#2).* In other words, this comprehensive assessment Post-Test cannot lower your Final Grade for this class, but it might raise your Final Grade if you do really well on it.

Dropping a Class

It is your responsibility to understand the University's procedure for dropping a class. If you stop attending this class but do not follow proper procedure for dropping the class, you will receive a failing grade and will also be financially obligated to pay for the class. To drop a class anytime after the first week of classes, you must complete and turn in a drop slip at an authorized registration center (see http://www.missouristate.edu/recreg/chnsched.html). **You do not need to obtain any signatures on the drop slip**. It does not need to be signed by your instructor, your advisor, or a department head. If you wish to withdraw from the University (i.e., drop all your classes), contact the Office of the Registrar at 836-5520.

Academic Integrity/Cheating Policy

Missouri State University is a community of scholars committed to developing educated persons who accept the responsibility to practice personal and academic integrity. **You are responsible for knowing and following the university's student honor code,** *Student Academic Integrity Policies and Procedures*, available at www.missouristate.edu/assets/provost/AcademicIntegrityPolicyRev-1-08.pdf and also

available at the Reserves Desk in Meyer Library. Any student participating in any form of academic dishonesty will be subject to sanctions as described in this policy.

Disability Accommodation Policy

To request academic accommodations for a disability, contact the Director of Disability Services, Plaster Student Union, Suite 405, (417) 836-4192 or (417) 836-6792 (TTY), http://www.missouristate.edu/disability**.** Students are required to provide documentation of disability to Disability Services prior to receiving accommodations. Disability Services refers some types of accommodation requests to the Learning Diagnostic Clinic, which also provides diagnostic testing for learning and psychological disabilities. For information about testing, contact the Director of the Learning Diagnostic Clinic, (417) 836-4787, http://psychology.missouristate.edu/ldc.

Non-Discrimination Policy

Missouri State University is an equal opportunity/affirmative action institution, and maintains a grievance procedure available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to the Office for Equity and Diversity, Park Central Office Building, 117 Park Central Square, Suite 111, (417) 836-4252. Other types of concerns (i.e., concerns of an academic nature) should be discussed directly with your instructor and can also be brought to the attention of your instructor's Department Head.

Policy on Use of Cell Phones in Classes

As a member of the learning community, each student has a responsibility to other students who are members of the community. **When cell phones or pagers ring and students respond in class or leave class to respond, it disrupts the class**. Therefore, the ***Office of the Provost*** ***prohibits the use by students of cell phones, pagers, PDAs, or similar communication devices during scheduled classes. All such devices must be turned off or put in a silent (vibrate) mode and ordinarily should not be taken out during class.*** Given the fact that these same communication devices are an integral part of the University's emergency notification system, an exception to this policy would occur when numerous devices activate simultaneously. When this occurs, students may consult their devices to determine if a university emergency exists. If that is not the case, the devices should be immediately returned to silent mode and put away. Other exceptions to this policy may be granted at the discretion of the instructor.

TENTATIVE COURSE OUTLINE

A **Physical Geography: an introduction**
Components of physical geography, history of physical geography as a science, tools used in physical geography, structure of environmental systems, flows of energy and matter, open and closed flow systems, systems equilibrium and systems feedback.

B **The Earth: basic concepts and the geographic grid**
The place of Planet Earth in the Universe, geocentric and heliocentric systems, the spherical earth, topography of oceanic basins and continental land masses, the geographic grid (latitude/longitude), map projections.

C **Earth-Sun relationships**
Solar output, sunspot cycle, solar constant and insolation, Earth-Sun astronomical relationships, rotation and revolution, Earth's axial tilt and seasonality

D **Atmospheric composition and thermal structure**
Chemical composition, Permanent and variable gases, Vertical thermal structure of the atmosphere: troposphere, stratosphere, mesosphere and thermosphere. Ionosphere and Auroras.

E **Weather and Climate: a) Radiation and Air Temperature**
Absorption, reflection and scattering of energy, albedo, earth-atmosphere energy balance, vertical heat transfers.
Air temperature: cycles, land and water contrasts, world spatial patterns.

F **Weather and Climate: b) Atmospheric Moisture**
Humidity, relative humidity, vapor pressure, dew point temperature, saturation, condensation, etc…) adiabatic process, stable and unstable atmospheric conditions, clouds, fogs, atmospheric lifting mechanisms and precipitations

G **Weather and Climate: c) Atmospheric Circulation**
Scales of atmospheric circulation, Pressure gradient, Coriolis effect, frictional force on surface winds, land and sea breeze, geostrophic flow, general atmospheric circulation, ITCZ, subtropical Highs, Trade Winds and Westerlies, Polar front, index cycle (zonal and meridional flows), Upper-air westerlies and polar jet stream. Connections between

atmospheric circulation and oceanic circulation (marine currents).

H **Weather and Climate: d) Synoptic Climatology**
Primary and secondary air masses, frontogenesis, synoptic meteorology: stationary, cold, warm and occluded fronts, cyclones and anticyclones, cyclolysis, severe weather: thunderstorms, tornadoes, and hurricanes

I **Hydrosphere: a) Water resources and the Soil water Budget**
Hydrologic cycle, surface water, soil water flowpath: evaporation, transpiration, runoff, infiltration, gravity percolation. Soil at field capacity, soil water cycle, Thornthwaite's soil moisture budget: actual and potential evapotranspiration, soil moisture utilization, soil moisture storage, soil moisture recharge, deficit and surplus.

J **Hydrosphere: b) Water Surplus: subsurface and surface conditions**
Subsurface conditions: water table, aquifers (unconfined and confined), aquiclude, subterranean flow, overuse of groundwater, groundwater pollution.
Surface conditions: Overland flow, stream flow, stream gradient and velocity, stream discharge. Drainage basins: morphology, density and spatial patterns, storm hydrographs.

K **Hydrosphere: c) Fluvial Processes**
Stream channel as a conceptual model: water flow and sediments transport. Stream erosion: hydraulic action, abrasion and corrosion. Steam transportation: dissolved load, suspended load, and bed load. Steam capacity, stream deposition: alluvial deposits, floodplains, terraces and deltas, meanders and oxbow lakes,

L **Lithosphere, Rocks and Minerals**
Structure of the earth (core, mantle, crust), asthenosphere, oceanic and continental crust.
Lithification, rock properties: composition, texture, structure (bedding planes, joints cleavages), major rock forming minerals, scale of hardness (minerals). Rock types: felsic and mafic rocks, igneous rocks (intrusive and extrusive), sedimentary rocks (clastic, chemically precipitated, organic), and metamorphic rocks. Cycle of rock change.

M **Tectonic System and Earthquakes**
Continental drift and plate tectonic theory, plate subduction, sea-floor spreading, crustal compression. Faults: reverse, transcurrent, normal, overthrust. Earthquake conditions, World seismicity, seismic waves. Earthquake magnitude and intensity, primary hazards associated with seismic events: ground shaking, fault rupture, ground failure, tsunami.

N **Volcanism**

What are active volcanoes? Location of active volcanoes, plate subduction , plate divergence, and intraplate volcanism, effusive and explosive eruptions, shield and strato-volcanoes, types of eruptions. Primary hazards associated with volcanism: lava flows, pyroclastic falls, and pyroclastic flows. Secondary hazards associated with volcanism: lahars, glacier melt, toxic gases.

O **Landscapes: Topography and Development**

Earth's crustal order of relief, landforms and landscapes. Lithification, weathering, erosion and deposition processes, Structural landforms, weathering landforms, erosional landforms, depositional landforms

P **Weathering**

Impacts of weathering, weathering zone, weathering agents.
Physical weathering: frost action, thermal (exfoliation I), biological, salt crystal (crystallization), wetting and drying, pressure release (exfoliation II).
Chemical weathering: simple dissolution, chelation, carbonation, oxidation, hydrolysis and hydration,

Q **The Soil Layer**

Nature of a soil, physical, chemical and biological activities related to soil forming processes, soil forming factors, soil characteristics (horizons, topsoil, subsoil, solum, eluviation, illuviation).
Soil properties: color, texture, structure. Soil acidity and alkalinity,
Soil orders.

R **Biosphere - The Vegetation Layer**

Physical environmental factors and vegetational response, biomes, community and habitats, energy flows and material cycles.

Laboratory Policy Statement- Fall 2010

Department of Geography, Geology, and Planning

GRY 142: Introduction to Physical Geography (Lab) Building/Room #: Temple 330

Day	Section	Time	Instructor
Monday	301	4:00-5:50pm	Vail
Tuesday	001	10:00- 11:50am	Grootens
	004	3:30-5:20pm	Vail
Thursday	002	3:30-5:20pm	Vail

Instructors: Nick Vail
Temple 374-B
417-836-8705
Vail0227@live.MissouriState.edu

Heather Grootens
Temple 307
heather75@live.missouristate.edu

Office Hours: Monday 1:00-4:00pm
Or by email appointment

Monday 11:45-12:45 pm
Tuesday 12:00-1:00 pm
Wednesday 1:00-2:00pm
Or by email appointment

CATALOG DESCRIPTION: GRY 142 - Introduction to Physical Geography. 4(3-2) F, S.
General Education Course (Natural World). A study of the earth's natural systems including weather and climate, rocks and minerals, landforms and processes of landform development, biogeography, water resources and soils. Map fundamentals and the interrelationships of the geographic factors of the natural environment are emphasized. Students who take GRY 240 and GRY 142 may receive credit for only one of these courses.

COURSE OBJECTIVES

The purpose of the lab sessions is to explore certain main themes covered in the course in greater detail than permitted during lecture. Book exercises, map work, and hands-on projects will be used to help develop a more in depth understanding of selected topics in physical geography. The lab sessions tend to be informal, while discussion and cooperative help between students is encouraged.

We will be using a manual specially written for this class. To get the most from the lab sessions, please read through the weekly units before coming to class. Instruction on unit topics will be given before and during class as needed. If you are familiar with the material beforehand, your class work will be easier.

CGEIP Goals

GRY 142 (Introduction to Physical Geography) is a General Education course (Natural World) sanctioned by the Committee on General Education and Intercollegiate Programs (CGEIP). ***Below is a short list of some of the CGEIP Educational Goals and how GRY 142 complies with them.***

General Educational Goals Part 1-B2: ***Information-Gathering, Reasoning, and Synthesizing Abilities – Knowing how and when to make generalizations and value judgments.*** GRY 142 introduces students to the cyclical nature of geosystems, their interpretation, and to disagreements amongst scientists regarding how future environmental changes might progress. GRY 142 encourages students to develop their own opinions on environmental issues based on current accepted theories and issues discussed in class.

General Educational Goals Part 1-B4, B5: ***Information-Gathering, Reasoning, and Synthesizing Abilities – Skill in making deductive inferences (B4), and Ability to use relevant quantitative methods (B5).*** GRY 142 is designed to teach the general education student skills in making deductive inferences and to learn relevant quantitative methods used by physical geographers to explore and model the phenomena they observe (e.g., climograph, soil water budget, etc…).

*General Educational Goals Part 1- C1, C2****: Reflective, creative and critical dispositions. – Striving to be well informed and open-minded (C1), and Looking for multiple possibilities and being able to deal with ambiguity(C2).*** GRY 142 is aimed at increasing the degree of awareness of students to environmental issues, exposing the complex nature of geosystems, and allowing students to develop a well informed, open-minded critical approach on matters relevant to environmental processes.

General Educational Goals Part 2-A1: ***Understanding of the Natural World – Knowledge of the physical universe (in this case, Planet Earth) including its origin and the physical laws governing it.*** GRY 142 analyses each physical realm of the Earth: atmosphere, hydrosphere, lithosphere and biosphere. GRY 142 examines the complex interconnectedness between each physical component, and the physical laws governing Earth's global geosystem.

General Educational Goals Part 2-A3: ***Understanding of the Natural World – Understanding the history and methods of scientific inquiry and alternative explanations of the natural world.*** GRY 142 seeks to inform students about changes that have affected physical geography as a science throughout history. It also presents qualitative and quantitative methods used by geographers.

General Educational Goals Part 2-A5: ***Understanding of the Natural World - Develop an understanding of the ways human choices affect the earth and living systems and the responsibilities of individual citizens and communities to preserve global resources.*** GRY 142 explores the concept of global change by examining several processes that shape the physical environment, both natural and human induced. Issues such as global warming and deforestation are analyzed, and their consequences on the living environment examined.

General Educational Goals Part 2-B1a: ***Understanding Culture and Society - Understanding the unique shared ways of thinking, believing, and acting, developed by a people who live together over a long period of time.*** In the context of natural disasters**,** GRY 142 demonstrates that culture plays an important role on the way a community reacts when facing adverse environmental circumstances (e.g., earthquake, volcanism, drought, tsunami, hurricane landfall, etc…).

COURSE REQUIREMENTS

Lab Manual: Applied Physical Geography: Geosystems in the Laboratory, 7th Edition 2008, by Christopherson and Thomsen

Bring the textbook, lab manual, scientific calculator, and ruler (millimeters and inches) to class each week unless instructed otherwise. Several lab assignments will involve mathematical calculations and/or measurements. Be prepared to do calculations on exams as well.

ATTENDANCE

Attendance is strongly recommended. It will be recorded randomly at the beginning of the lab session throughout the semester. Your punctuality to class is appreciated.

MAKE-UP POLICY

Make-up exams will only be allowed if the instructor is notified of the problem prior to the lab session time (or within one day of missing your lab). Acceptable absences include university-sanctioned activities, personal illness, or family emergencies. Written verification for your absence is mandatory. Make-up exams without prior instructor verification must be taken in the instructors' office within a two week period after the original test date. After the two week period, if the test has not been taken, the resulting grade will be a zero.

GRADING

You will not receive an individual grade for the lab. Instead you will receive a combined lecture-lab grade (**lecture 60% & lab 40%**) determined by the lecture instructor.

You will be tested over lab material on each of the three tests given in the labs. The lab portion of the three tests will be administered during weekly lab sessions.

The breakdown of the lab scores is as follows;

25% Weekly assignments

15% Tests

Weekly lab assignments are due at the beginning of the following week's class. Even if you were not in class for the discussion, you will have one week to complete the lab assignment. If the assignment is not turned in on time, you will have **three days** after it is due to get it submitted. A daily 25% penalty will be imposed on late assignments. Assignments will not be accepted after the third day. This will automatically result in a zero for the assignment.

CHEATING POLICY

Missouri State University is a community of scholars committed to developing educated persons who accept the responsibility to practice personal and academic integrity. You are responsible for knowing and following the university's student honor code, *Student Academic Integrity Policies and Procedures*, available at www.missouristate.edu/assets/provost/AcademicIntegrityPolicyRev-1-08.pdf and also available at the Reserves Desk in Meyer Library. Any student participating in any form of academic dishonesty will be subject to sanctions as described in this policy.

NONDISCRIMINATION

Missouri State University is an equal opportunity/affirmative action institution, and maintains a grievance procedure available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to the Office for Equity and Diversity, Park Central Office Building, 117 Park Central Square, Suite 111, (417) 836-4252. Other types of concerns (i.e., concerns of an academic nature) should be discussed directly with your instructor and can also be brought to the attention of your instructor's Department Head.

Please visit the OED website at www.missouristate.edu/equity/.

DISABILITY ACCOMODATIONS

To request academic accommodations for a disability, contact Katheryne Staeger-Wilson, Director of the Disability Resource Center, Plaster Student Union, Suite 405, (417) 836-4192, (417) 836-6792 TTY, www.missouristate.edu/disability. Students are required to provide documentation of disability to the Disability Resource Center prior to receiving accommodations. The Disability Resource Center refers some types of accommodation requests to the Learning Diagnostic Clinic (LDC). For a sliding scale fee, the LDC also provides diagnostic testing for learning and psychological disability.

For information about testing, contact Dr. Steve Capps, Director, (417) 836-4787, http://psychology.missouristate.edu/ldc.

CELL PHONE POLICY

As a member of the learning community, each student has a responsibility to other students who are members of the community. When cell phones or pagers ring and students respond in class or leave class to respond, it disrupts the class. Therefore, the Office of the Provost prohibits the use by students of cell phones, pagers, PDAs, or similar communication devices during scheduled classes. All such devices must be turned off or put in a silent (vibrate) mode and ordinarily should not be taken out during class. Given the fact that these same communication devices are an integral part of the University's emergency notification system, an exception to this policy would occur when numerous devices activate simultaneously. When this occurs, students may consult their devices to determine if a university emergency exists. If that is not the case, the devices should be immediately returned to silent mode and put away. Other exceptions to this policy may be granted at the discretion of the instructor.

GRY 142 Fall 2010 –Lab Schedule

Date	Subject	Unit
August 23-27	Policy Statement, Assessment Survey, Pretest	
August 30-September 3	Latitude, Longitude, and Time	Lab Exercise #1 - pg. 17-30
September 6-10	Map Projections	Lab Exercise #3 - pg. 41-58
September 13-17	Contour Maps	Lab Exercise #4 - pg. 59-76, SG
September 20-24	TEST 1	
September 27-October 1	Earth/Sun Relations	Lab Exercise #5 - pg. 77-88
October 4-8	Temperature Patterns	Lab Exercise #6 - pg. 89-110
October 11-15	Atm. Pressure and Stability (Fall Break)	Lab Exercises #7/8 - pg. 111-136
October 18-22	Weather Maps	Lab Exercise #9 - pg. 137-154, SG
October 25-29	TEST 2	
November 1-5	Water Budget	Lab Exercise #10 - pg. 155-166
November 8-12	Karst Landscapes	Lab Exercise #17 - pg. 269-274
November 15-19	Plate Tectonics	Lab Exercise #12 - pg. 191-204
November 22-26	THANKSGIVING BREAK	
November 29-December 3	Rocks/Minerals	In Class Assignment
December 6-10	Air Photo Interpretation	In Class Assignment, SG
December 13-16	TEST 3	

Break Schedule To Work Around (Monday and Thursday Labs Only):

Monday, September 6th – Labor Day

Thursday, October 14th – Fall Break

GRY 142 – Assessment Survey I (week 1)

Name: _____

Instructions: Please mark your answers on this survey by circling the letter that best completes the statement or answers the question.

Assessing your attitudes about the role of GRY 142 as part of your General Education. The following questions are designed to assess your attitudes and opinions about specific General Education Goals and how GRY 142 complies with them. Please read these questions carefully and answer them honestly. **Note:** General Education goals are in bold characters.

1. For you personally to make thoughtful choices that can lead to a ***creative and productive life and responsible participation in society, how important is a general knowledge of the natural world?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

2. To what extent do you expect this course, GRY 142, to ***enhance your general knowledge of the natural world?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

3. For you personally, how important is a ***knowledge of the physical universe (e.g., Planet Earth), including knowledge about its origin and the physical laws governing it?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

4. To what extent do you expect this course, GRY 142, to ***enhance your knowledge of the physical universe (e.g., Planet Earth), including knowledge about its origin and the physical laws governing it?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

5. For you personally, how important is an ***understanding of the history and methods of scientific inquiry and alternative explanations of the natural world?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

6. To what extent do you expect this course, GRY 142, to ***enhance your understanding of the history and methods of scientific inquiry and alternative explanations of the natural world?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

7. For you personally, how important is an understanding of the ***ways human choices affect Earth and its living systems and the responsibilities of individual citizens and communities to preserve global resources?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

8. To what extent do you expect this course, GRY 142, to ***enhance your understanding of the ways human choices affect Earth and its living systems and the responsibilities of individual citizens and communities to preserve global resources?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

9. For you personally, how important is a ***well informed, open- minded approach on the complex nature of environmental processes?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

10. To what extent do you expect this course, GRY 142, to help you develop a ***well informed, open-minded approach on the complex nature of environmental processes?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

11. For you personally, how important is it to ***know how and when to make generalizations and value judgments about the natural environment?***
    a. very important
    b. fairly important
    c. neutral
    d. rather unimportant
    e. completely unimportant

12. To what extent do you expect this course, GRY 142, to help you increase your ability at knowing ***how and when to make generalizations and value judgments about the natural environment?***
    a. to a very great extent
    b. to a significant extent
    c. to a moderate extent
    d. very little
    e. hardly at all

13. For you personally, how important is ***the ability to use relevant quantitative methods*** when studying Planet Earth and its physical components?
    a. very important
    b. fairly important
    c. neutral
    d. rather unimportant
    e. completely unimportant

14. To what extent do you expect this course, GRY 142, to help you increase your ability ***to use relevant quantitative methods*** when studying Planet Earth and its physical components?
    a. to a very great extent
    b. to a significant extent
    c. to a moderate extent
    d. very little
    e. hardly at all

15. ***Cultures and societies generate unique shared ways of thinking, believing and acting*** when a natural disaster strikes. For you personally, is it important to examine extremes conditions generated by the natural world, and how different communities react to natural hazards?
    a. very important
    b. fairly important
    c. neutral
    d. rather unimportant
    e. completely unimportant

16. To what extent do you expect this course, GRY 142, to help you increase your knowledge on the ***unique shared ways of thinking, believing and acting of communities*** when extremes conditions generated by the natural world create hazardous conditions?
    a. to a very great extent
    b. to a significant extent
    c. to a moderate extent
    d. very little
    e. hardly at all

GRY 142 -- PRE-TEST

Name: _____ Section:_____

INSTRUCTIONS: Please mark your answers to the following questions on the enclosed answer sheet using a #2 pencil. Your participation in this pre-test is a required part of this course; you will not be allowed to take the first lecture exam if you have not completed this test. However, your performance on this assessment (i.e., how well you answer the questions) can not have any negative impact on your grade for this course.

Assessing Your Prior Knowledge of the Subject Matter of GRY 142.
The following sixty questions are designed to assess your general knowledge of the fundamental principles and basic facts of Physical Geography prior to the start of this course. Please read these questions carefully and answer them to the best of your ability without referring to your textbook or any other reference materials.

1. The focus of physical geography is on:
   a. weather
   b. landforms
   c. life layer
   d. soils

2. Which of the following longitudes is associated to the Prime Meridian at Greenwich UK?
   a. 0^{o}
   b. 360^{o}
   c. 90^{o}
   d. 180^{o}

3. A line connecting all the points of the same latitude is called:
   a. isotherm
   b. meridian
   c. parallel
   d. perpendicular

4. The earth bulges slightly at the equator and flattens at the poles. What is the main physical factor responsible for this condition?
   a. axial tilt
   b. orbital path of the earth around the sun
   c. the continental drift
   d. period of rotation on axis

5. The inclination of the earth's axis is _____ from the perpendicular to the plane of the ecliptic.
   a. 22º½
   b. 21º½
   c. 23º½
   d. 66º½

6. The motion of the Earth around its axis is _____ and determines the length of one _____ day.
   a. revolution, calendar
   b. rotation, twenty-four hour
   c. rotation, solar
   d. revolution, solar

7. On the summer solstice (June 21):
   a. the noon sunrays are perpendicular with the ground at the Tropic of Capricorn
   b. areas lying south of 66º½S get 24 hours of sunshine
   c. the noon sunrays are perpendicular with the ground at the equator
   d. areas lying south of 66º½S get 24 hours of darkness

8. The most prominent natural greenhouse gas in the atmosphere is
   a. carbon dioxide
   b. methane
   c. water vapor
   d. nitrogen

9. Which of the following <u>is not</u> one of the permanent gases composing the atmosphere?
   a. argon
   b. hydrogen
   c. carbon dioxide
   d. nitrogen

10. Which of the following surfaces is most likely to have the lowest albedo?
   a. an asphalt road
   b. snow
   c. grass
   d. water

11. An isotherm is a line of equal:
   a. insolation
   b. precipitation
   c. air pressure
   d. temperature

12. If the air temperature and the dew point temperature are the same, you will get:
    a. evaporation
    b. precipitation
    c. saturation
    d. condensation

13. Which of the following terms refers to the maximum quantity of water vapor that can be present in the air at a given temperature?
    a. actual vapor pressure
    b. humidity
    c. relative humidity
    d. saturation vapor pressure

14. Relative humidity:
    a. is the total amount of water vapor present in the air
    b. is usually higher during daytime
    c. is the amount of water vapor in the air compared to the total amount it could hold at a given temperature
    d. is the total amount of water vapor that can be present in the air at a given temperature

15. A temperature change occurring within an air parcel without any gain or loss of heat (or energy) with the environment is called:
    a. scattering
    b. compression
    c. adiabatic process
    d. expansion

16. Which of the following cloud types is not a low-level cloud?
    a. stratocumulus
    b. stratus
    c. nimbostratus
    d. cumulonimbus

17. If you consider a map of the mean annual precipitation of the world, where would you find the "wettest" region on the globe?
    a. Between 5-30° N and S (Trade-wind coasts)
    b. Between 25-45° N and S (Subtropical regions)
    c. Between 10°N to 10°S (Equatorial belt)
    d. Between 35-65° N and S (Midlatitude west coasts)

18. Which of the following air masses is warm and dry?
    a. continental polar
    b. continental tropical
    c. maritime tropical
    d. maritime equatorial

19. In an anticyclone:
    a. the air pressure is lower at the center
    b. air divergence takes place at the surface
    c. the air is unstable
    d. air convergence takes place at the surface

20. The "tornado alley" in the mid-USA is well-known for its high frequency of tornadoes every year. However, one state located outside this region also records a substantial amount of tornadoes each year. Which state is it?
    a. Georgia
    b. Tennessee
    c. South Carolina
    d. Florida

21. When a tropical storm records sustained wind speed of _____, it is upgraded to hurricane status.
    a. 74mph
    b. 96mph
    c. 155mph
    d. 110mph

22. Ocean gyres are located underneath:
    a. the inter-tropical convergence zone
    b. large doldrums
    c. warm marine currents
    d. subtropical anticyclones

23. If you consider a vertical profile of oceanic temperatures, the transitional zone where the temperature decreases with depth is called:
    a. thermohaline
    b. deep zone
    c. thermocline
    d. isothermal

24. If you exclude ice sheets and glaciers around the world, ground water accounts for ____ of all fresh water.
    a. 35%
    b. 74%
    c. 94%
    d. 85%

25. The upper limit of the groundwater body is called:
    a. intermediate belt
    b. water channel
    c. water table
    d. soil water belt

26. What is the most important factor in determining water need (Potential Evapotranspiration [E_p]?
    a. soil water quantity
    b. precipitation
    c. temperature
    d. water use

27. A soil must absorb an amount of water equal to the summer storage withdrawal before _____ begins.
    a. gravity percolation
    b. storage recharge
    c. surplus
    d. evapotranspiration

28. The line of highest altitude which separates one drainage basin from another is called:
    a. watershed line
    b. trunk
    c. line of thalweg
    d. contour line

29. The drainage density of a stream system in a drainage basin is primarily a function of:
    a. the vegetation
    b. the geology
    c. the soil
    d. the topography

30. A layer of rock or sediment that contains abundant, freely flowing ground water is called:
    a. spring
    b. water table
    c. aquiclude
    d. aquifer

31. The _____ of a stream is a narrow trough, shaped by the forces of flowing water.
    a. channel
    b. mouth
    c. tributary
    d. long profile

32. Clay, silt and sand are carried by a stream as _____.
    a. a component of the dissolved load
    b. a suspended load
    c. ions in the dissolved load
    d. a bed load

33. Stream _____ is the progressive removal of mineral material from the floor and sides of the channel, whether bedrock or regolith.
    a. erosion
    b. deposition
    c. load
    d. transportation

34. You can examine the temporal variations of stream discharge with a:
    a. storm hydrograph
    b. storm flowchart
    c. storm hygrograph
    d. storm odograph

35. Within the Earth's interior, the metallic core is enclosed in the _____, a rock shell about 2900 kilometers thick.
    a. asthenosphere
    b. mantle
    c. moho
    d. lithosphere

36. Which of the following minerals is the hardest?
    a. feldspar
    b. olivine
    c. quartz
    d. mica

37. Clastic rocks refer to:
    a. sedimentary rocks
    b. extrusive igneous rocks
    c. intrusive igneous rocks
    d. metamorphic rocks

38. Which of the following rocks is an igneous rock?
    a. shale
    b. granite
    c. marble
    d. schist

39. Beaches and floodplains are examples of:
    a. erosional landforms
    b. depositional landforms
    c. weathering landforms
    d. structural landforms

40. Which of the following is a weathering landform?
    a. rift valley
    b. glacial valley
    c. cavern
    d. flood plain

41. Which of the following is not a landform?
    a. sinkhole
    b. desert
    c. volcano
    d. glacier

42. The intensity of an earthquake is measured by the _____ scale.
    a. Richter
    b. Geiger
    c. Mercalli
    d. Fujita

43. Which of the following seismic waves are compressing and stretching rocks?
    a. primary waves
    b. secondary waves
    c. love waves
    d. rayleigh waves

44. In order to be classed as active, a volcano must show geological evidence of eruption in the last:
    a. 10,000 years
    b. 100,000 years
    c. 1,000 years
    d. 20,000 years

45. Strato-volcanoes (e.g., conical volcanoes) generally occur:
    a. on mid-oceanic ridges
    b. at the centre of plate tectonics
    c. at subduction zones
    d. only in Hawaii

46. Ashes can reach the stratosphere during a:
    a. vulcanian eruption
    b. hawaiian eruption
    c. vesuvian eruption
    d. plinean eruption

47. A shield volcano is associated with:
    a. basaltic magma
    b. pahoehoe lava flows
    c. little tephra
    d. explosive eruption
    e. a,c and d only

48. Which of the following is not a lava flow type?
    a. cinder
    b. pillow
    c. pahoehoe
    d. Aa

49. The 1815 eruption of _____ caused the "Year without a Summer." Daily minimum temperatures were abnormally low in the northern hemisphere from late spring to early autumn.
    a. Mt Etna
    b. Mt Tambora
    c. Mt Pelee
    d. Mt Vesuvius

50. One of the most important physical weathering process in _____ climates is _____.
    a. warm, frost action
    b. cold, frost action
    c. cold, salt crystallization
    d. warm, plant root action (biological)

51. Exfoliation is a physical weathering process that is active in:
    a. frost action and thermal weathering
    b. pressure release (unloading) and thermal weathering
    c. wetting and drying, and salt weathering
    d. pressure release (unloading) and frost action

52. Chemical weathering processes will be most active under:
    a. light precipitations and warm temperatures
    b. light precipitations and cold temperatures
    c. abundant precipitations and cold temperatures
    d. abundant precipitations and warm temperatures

53. Which of the following <u>is not</u> a chemical weathering process.
    a. chelation
    b. hydrolysis
    c. salt weathering
    d. oxidation

54. In general, a soil will contain:
    a. 45% of mineral matter
    b. 35% of mineral matter
    c. 60% of mineral matter
    d. 55% of mineral matter

55. The display of horizons on a cross section through the soil is termed a _____.
    a. soil strata
    b. soil layer
    c. solum
    d. soil profile

56. Thick soils will be found where:
    a. climate is hot and dry
    b. climate is moist and cold
    c. climate is moist and warm
    d. climate is dry and cool

57. The soils of the mid-west prairies in the USA have a _____ color
    a. dark brown or black
    b. yellow
    c. red
    d. white or gray

58. Which of the following soils is especially rich in humus and associated with large-scale commercial grain production in the US.
    a. Ultisols
    b. Spodosols
    c. Alfisols
    d. Mollisols

59. A solum refers to that part of the soil made up of the:
    a. A, E and B horizons
    b. E and B horizons
    c. A, B and C horizons
    d. O horizon to the regolith

60. The process of _____ is an extremely slow downhill movement of soil and regolith.
    a. soil erosion
    b. solifluction
    c. mass wasting
    d. soil creep

GRY 142 – Assessment Survey II (week 16)

Name: _____

Instructions: Please mark your answers on this survey by circling the letter that best completes the statement or answers the question.

Assessing your attitudes about the role of GRY 142 as part of your General Education. The following questions are designed to assess your attitudes and opinions about specific General Education Goals and how GRY 142 complied with them during this semester. Please read these questions carefully and answer them honestly.

Note: General Education goals are in bold characters.

1. For you personally to make thoughtful choices that can lead to a ***creative and productive life and responsible participation in society, how important is a general knowledge of the natural world?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

2. To what extent do you think this course, GRY 142, has enabled you to ***enhance your general knowledge of the natural world?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

3. For you personally, how important is a ***knowledge of the physical universe (e.g., Planet Earth), including knowledge about its origin and the physical laws governing it?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

4. To what extent do you think this course, GRY 142, has enabled you to ***enhance your knowledge of the physical universe (e.g., Planet Earth), including knowledge about its origin and the physical laws governing it?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

5. For you personally, how important is an ***understanding of the history and methods of scientific inquiry and alternative explanations of the natural world?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

6. To what extent do you think this course, GRY 142, has enabled you to ***enhance your understanding of the history and methods of scientific inquiry and alternative explanations of the natural world?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

7. For you personally, how important is an understanding of the ***ways human choices affect Earth and its living systems and the responsibilities of individual citizens and communities to preserve global resources?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

8. To what extent do you think this course, GRY 142, has enabled you to ***enhance your understanding of the ways human choices affect Earth and its living systems and the responsibilities of individual citizens and communities to preserve global resources?***
   a. to a very great extent
   b. to a significant extent
   c. to a moderate extent
   d. very little
   e. hardly at all

9. For you personally, how important is a ***well informed, open- minded approach about the complex nature of environmental processes?***
   a. very important
   b. fairly important
   c. neutral
   d. rather unimportant
   e. completely unimportant

10. To what extent do you think this course, GRY 142, has enabled you to develop a ***well informed, open- minded approach about the complex nature of environmental processes?***
    a. to a very great extent
    b. to a significant extent
    c. to a moderate extent
    d. very little
    e. hardly at all

11. For you personally, how important is it to ***know how and when to make generalizations and value judgments about the natural environment?***
    a. very important
    b. fairly important
    c. neutral
    d. rather unimportant
    e. completely unimportant

12. To what extent do you think this course, GRY 142, has enabled you to increase your ability at knowing ***how and when to make generalizations and value judgments about the natural environment?***
    a. to a very great extent
    b. to a significant extent
    c. to a moderate extent
    d. very little
    e. hardly at all

13. For you personally, how important is ***the ability to use relevant quantitative methods*** when studying Planet Earth and its physical components?
    a. very important
    b. fairly important
    c. neutral
    d. rather unimportant
    e. completely unimportant

14. To what extent do you think this course, GRY 142, has enabled you to increase your ability ***to use relevant quantitative methods*** when studying Planet Earth and its physical components?
    a. to a very great extent
    b. to a significant extent
    c. to a moderate extent
    d. very little
    e. hardly at all

15. ***Culture and society generates unique shared ways of thinking, believing and acting*** when a natural disaster strikes. For you personally, is it important to examine extremes conditions generated by the natural world, and how different communities react to natural hazards?
    a. very important
    b. fairly important
    c. neutral
    d. rather unimportant
    e. completely unimportant

16. To what extent do you think this course, GRY 142, has enabled you to increase your knowledge on the ***unique shared ways of thinking, believing and acting of communities*** when extremes conditions generated by the natural world create hazardous conditions?
    a. to a very great extent
    b. to a significant extent
    c. to a moderate extent
    d. very little
    e. hardly at all

GRY 142 -- POST-TEST

Name: _____

INSTRUCTIONS: Please mark your answers to the following questions on the enclosed answer sheet using a #2 pencil. Your participation in this post-test is a required part of this course. However, your performance on this assessment (i.e., how well you answer the questions) can not have any negative impact on your final grade for this course.

Assessing Your Acquired Knowledge of the Subject Matter of GRY 142.
The following sixty questions will be used to assess the general knowledge you have gained on the fundamental principles and basic facts of Physical Geography during this course. Please read these questions carefully and answer them to the best of your ability without referring to your textbook or any other reference materials.

1. The focus of physical geography is on:
   a. weather
   b. landforms
   c. life layer
   d. soils

2. Which of the following longitudes is associated to the Prime Meridian at Greenwich UK?
   a. 0^o
   b. 360^o
   c. 90^o
   d. 180^o

3. A line connecting all the points of the same latitude is called:
   a. isotherm
   b. meridian
   c. parallel
   d. perpendicular

4. The earth bulges slightly at the equator and flattens at the poles. What is the main physical factor responsible for this condition?
   a. axial tilt
   b. orbital path of the earth around the sun
   c. the continental drift
   d. period of rotation on axis

5. The inclination of the earth's axis is _____ from the perpendicular to the plane of the ecliptic.
   a. 22º½
   b. 21º½
   c. 23º½
   d. 66º½

6. The motion of the Earth around its axis is _____ and determines the length of one _____ day.
   a. revolution, calendar
   b. rotation, twenty-four hour
   c. rotation, solar
   d. revolution, solar

7. On the summer solstice (June 21):
   a. the noon sunrays are perpendicular with the ground at the Tropic of Capricorn
   b. areas lying south of 66º½S get 24 hours of sunshine
   c. the noon sunrays are perpendicular with the ground at the equator
   d. areas lying south of 66º½S get 24 hours of darkness

8. The most prominent natural greenhouse gas in the atmosphere is
   a. carbon dioxide
   b. methane
   c. water vapor
   d. nitrogen

9. Which of the following <u>is not</u> one of the permanent gases composing the atmosphere?
   a. argon
   b. hydrogen
   c. carbon dioxide
   d. nitrogen

10. Which of the following surfaces is most likely to have the lowest albedo?
   a. an asphalt road
   b. snow
   c. grass
   d. water

11. An isotherm is a line of equal:
   a. insolation
   b. precipitation
   c. air pressure
   d. temperature

12. If the air temperature and the dew point temperature are the same, you will get:
    a. evaporation
    b. precipitation
    c. saturation
    d. condensation

13. Which of the following terms refers to the maximum quantity of water vapor that can be present in the air at a given temperature?
    a. actual vapor pressure
    b. humidity
    c. relative humidity
    d. saturation vapor pressure

14. Relative humidity:
    a. is the total amount of water vapor present in the air
    b. is usually higher during daytime
    c. is the amount of water vapor in the air compared to the total amount it could hold at a given temperature
    d. is the total amount of water vapor that can be present in the air at a given temperature

15. A temperature change occurring within an air parcel without any gain or loss of heat (or energy) with the environment is called:
    a. scattering
    b. compression
    c. adiabatic process
    d. expansion

16. Which of the following cloud types is not a low-level cloud?
    a. stratocumulus
    b. stratus
    c. nimbostratus
    d. cumulonimbus

17. If you consider a map of the mean annual precipitation of the world, where would you find the "wettest" region on the globe?
    a. Between 5-30° N and S (Trade-wind coasts)
    b. Between 25-45° N and S (Subtropical regions)
    c. Between 10°N to 10°S (Equatorial belt)
    d. Between 35-65° N and S (Mid-latitude west coasts)

18. Which of the following air masses is warm and dry?
    a. continental polar
    b. continental tropical
    c. maritime tropical
    d. maritime equatorial

19. In an anticyclone:
    a. the air pressure is lower at the center
    b. air divergence takes place at the surface
    c. the air is unstable
    d. air convergence takes place at the surface

20. The "tornado alley" in the mid-USA is well-known for its high frequency of tornadoes every year. However, one state located outside this region also records a substantial amount of tornadoes each year. Which state is it?
    a. Georgia
    b. Tennessee
    c. South Carolina
    d. Florida

21. When a tropical storm records sustained wind speed of _____, it is upgraded to hurricane status.
    a. 74mph
    b. 96mph
    c. 155mph
    d. 110mph

22. Ocean gyres are located underneath:
    a. the inter-tropical convergence zone
    b. large doldrums
    c. warm marine currents
    d. subtropical anticyclones

23. If you consider a vertical profile of oceanic temperatures, the transitional zone where the temperature decreases with depth is called:
    a. thermohaline
    b. deep zone
    c. thermocline
    d. isothermal

24. If you exclude ice sheets and glaciers around the world, ground water accounts for ____ of all fresh water.
    a. 35%
    b. 74%
    c. 94%
    d. 85%

25. The upper limit of the groundwater body is called:
    a. intermediate belt
    b. water channel
    c. water table
    d. soil water belt

26. What is the most important factor in determining water need (Potential Evapotranspiration [E_p]?
    a. soil water quantity
    b. precipitation
    c. temperature
    d. water use

27. A soil must absorb an amount of water equal to the summer storage withdrawal before _____ begins.
    a. gravity percolation
    b. storage recharge
    c. surplus
    d. evapotranspiration

28. The line of highest altitude which separates one drainage basin from another is called:
    a. watershed line
    b. trunk
    c. line of thalweg
    d. contour line

29. The drainage density of a stream system in a drainage basin is primarily a function of:
    a. the vegetation
    b. the geology
    c. the soil
    d. the topography

30. A layer of rock or sediment that contains abundant, freely flowing ground water is called:
    a. spring
    b. water table
    c. aquiclude
    d. aquifer

31. The _____ of a stream is a narrow trough, shaped by the forces of flowing water.
    a. channel
    b. mouth
    c. tributary
    d. long profile

32. Clay, silt and sand are carried by a stream as _____.
    a. a component of the dissolved load
    b. a suspended load
    c. ions in the dissolved load
    d. a bed load

33. Stream _____ is the progressive removal of mineral material from the floor and sides of the channel, whether bedrock or regolith.
    a. erosion
    b. deposition
    c. load
    d. transportation

34. You can examine the temporal variations of stream discharge with a:
    a. storm hydrograph
    b. storm flowchart
    c. storm hygrograph
    d. storm odograph

35. Within the Earth's interior, the metallic core is enclosed in the _____, a rock shell about 2900 kilometers thick.
    a. asthenosphere
    b. mantle
    c. moho
    d. lithosphere

36. Which of the following minerals is the hardest?
    a. feldspar
    b. olivine
    c. quartz
    d. mica

37. Clastic rocks refer to:
    a. sedimentary rocks
    b. extrusive igneous rocks
    c. intrusive igneous rocks
    d. metamorphic rocks

38. Which of the following rocks is an igneous rock?
    a. shale
    b. granite
    c. marble
    d. schist

39. Beaches and floodplains are examples of:
    a. erosional landforms
    b. depositional landforms
    c. weathering landforms
    d. structural landforms

40. Which of the following is a weathering landform?
    a. rift valley
    b. glacial valley
    c. cavern
    d. flood plain

41. Which of the following is not a landform?
    a. sinkhole
    b. desert
    c. volcano
    d. glacier

42. The intensity of an earthquake is measured by the _____ scale.
    a. Richter
    b. Geiger
    c. Mercalli
    d. Fujita

43. Which of the following seismic waves are compressing and stretching rocks?
    a. primary waves
    b. secondary waves
    c. love waves
    d. rayleigh waves

44. In order to be classed as active, a volcano must show geological evidence of eruption in the last:
    a. 10,000 years
    b. 100,000 years
    c. 1,000 years
    d. 20,000 years

45. Strato-volcanoes (e.g., conical volcanoes) generally occur:
    a. on mid-oceanic ridges
    b. at the centre of plate tectonics
    c. at subduction zones
    d. only in Hawaii

46. Ashes can reach the stratosphere during a:
    a. vulcanian eruption
    b. hawaiian eruption
    c. vesuvian eruption
    d. plinean eruption

47. A shield volcano is associated with:
    a. basaltic magma
    b. pahoehoe lava flows
    c. little tephra
    d. explosive eruption
    e. a,c and d only

48. Which of the following is not a lava flow type?
    a. cinder
    b. pillow
    c. pahoehoe
    d. Aa

49. The 1815 eruption of _____ caused the "Year without a Summer." Daily minimum temperatures were abnormally low in the northern hemisphere from late spring to early autumn.
    a. Mt Etna
    b. Mt Tambora
    c. Mt Pelee
    d. Mt Vesuvius

50. One of the most important physical weathering process in _____ climates is _____.
    a. warm, frost action
    b. cold, frost action
    c. cold, salt crystallization
    d. warm, plant root action (biological)

51. Exfoliation is a physical weathering process that is active in:
    a. frost action and thermal weathering
    b. pressure release (unloading) and thermal weathering
    c. wetting and drying, and salt weathering
    d. pressure release (unloading) and frost action

52. Chemical weathering processes will be most active under:
    a. light precipitations and warm temperatures
    b. light precipitations and cold temperatures
    c. abundant precipitations and cold temperatures
    d. abundant precipitations and warm temperatures

53. Which of the following <u>is not</u> a chemical weathering process.
    a. chelation
    b. hydrolysis
    c. salt weathering
    d. oxidation

54. In general, a soil will contain:
    a. 45% of mineral matter
    b. 35% of mineral matter
    c. 60% of mineral matter
    d. 55% of mineral matter

55. The display of horizons on a cross section through the soil is termed a _____.
    a. soil strata
    b. soil layer
    c. solum
    d. soil profile

56. Thick soils will be found where:
    a. climate is hot and dry
    b. climate is moist and cold
    c. climate is moist and warm
    d. climate is dry and cool

57. The soils of the mid-west prairies in the USA have a _____ color
    a. dark brown or black
    b. yellow
    c. red
    d. white or gray

58. Which of the following soils is especially rich in humus and associated with large-scale commercial grain production in the US.
    a. Ultisols
    b. Spodosols
    c. Alfisols
    d. Mollisols

59. A solum refers to that part of the soil made up of the:
    a. A, E and B horizons
    b. E and B horizons
    c. A, B and C horizons
    d. O horizon to the regolith

60. The process of _____ is an extremely slow downhill movement of soil and regolith.
    a. soil erosion
    b. solifluction
    c. mass wasting
    d. soil creep