GEography 101
Physical Geography

Required Texts: Introducing Physical Geography 4th Ed.
by Strahler and Strahler
Geologic Map of Montana

This course presents an introduction to the Earth's physical geographical features. These features include structural and erosional processes, surface and ground water processes, ocean processes, and atmospheric processes. The course presents a study of these processes, how they effect man and how man effects them.

Course Objectives:
1. To understand the concepts underlying the Earth's structural and erosional processes.
2. To understand the concepts underlying the Earth's water processes.
3. To understand the concepts underlying the Earth's ocean processes.
4. To understand the concepts underlying the Earth's atmospheric processes.

Course Content:

May 15
Earth rotation, Longitude, Latitude, Maps, Global time, Standard time, World time zones, Earth-Sun relationships. pp. 26-40

May 16
Earth's Energy Balance, Insolation, Composition of the atmosphere, Albedo, Greenhouse effect, Net radiation and latitude. pp. 51-72

May 18
Air Temperature, Diurnal cycle, Urban heat island, Temperature structure of the atmosphere, Temperature changes, Environmental lapse rate, Inversions, Annual air temperature, Land and water contrasts, World temperature patterns. pp. 87-112

May 22
Atmospheric moisture and precipitation, Hydrosphere and the hydrologic cycle, Global water balance, Humidity, Relative humidity, Adiabatic process, Wet and dry adiabatic rates, Clouds, Precipitation, Orographic precipitation, Thunderstorms, Hail storms, Tornadoes. pp. 119-139

May 23
Winds and global circulation, Atmospheric pressure, Air pressure and altitude, Wind, Wind and pressure gradients, Land and sea breezes, Coriolis effect, Cyclones and anticyclones, Global wind and pressure patterns, Winds aloft, Geostrophic winds, Rossby waves, Jet stream, Polar front, Oceans. pp. 151-179

May 24
Weather systems, Air masses, Traveling cyclones and anticyclones, Tropical transport of heat and moisture, Cloud cover, Precipitation and global warming. pp. 155-207

May 26
Global climates, Keys to climate, Climate classification, Low latitude climates, Mid-latitude climates, High latitude climates. pp. 213-265
May 29
Review chapters 1-7

May 30
EXAM, WEATHER AND CLIMATE

May 31

June 1
Lithosphere and plate tectonics, Structure of the Earth, Geologic time, Continents, Ocean basins, plate tectonics. pp. 375-421

June 5

June 6
Weathering and mass wasting, physical and chemical weathering and associated landforms, Mass wasting, induced mass wasting, Landforms of Arctic and alpine tundra. pp. 455-480

June 7
Fresh water of the continents, Ground water, Limestone solution, Ground water management, Surface water, Stream flow, Lakes, Water resources. pp. 483-509

June 8
Landforms made by running water, Fluvial processes, Slope erosion, Work of streams, Stream gradation, Fluvial processes in arid environments. pp. 513-540

June 12 & 13
Glacial landforms and the Ice Age. pp 630-650

June 14
Review chapters 11-17 and 19

June 15 Exam geology

COURSE REQUIREMENTS:
Students must complete all exams.

GRADING:
Assessed Outcomes: Exams will be structured to test the students critical thinking abilities concerning the Geographical concepts outlined in the course objectives and to solve geographical problems.
Each exam will be scored on the basis of the percentage of correct answers. The percentage correct from all exams will be averaged to arrive at a final course grade according to the scale below.

85-100  A
70-84   B
55-69   C
41-54   D
0-40

Exam questions will cover materials presented in lectures and reading assignments.

Students involved in cheating will receive a grade of “F” for the course.

Absences on exam days will result in a grade of zero for that exam except under the following conditions: (1) family emergency, (2) medical reasons. These exceptions must be accompanied by an excuse approved by the dean of students office. Make up exams will be scheduled on the last regular class meeting of the semester.

Under no conditions will exams be given prior to the scheduled exam dates.

If you are a student that needs assistance with your exam because of a handicap, please let me know so that we can jointly arrange a specialized procedure with Student Support Services.

Electronic devices: Calculators and tape recorders are allowed. Cell phones are not to be used as they are disrupting to other students. Please turn cell phones off during class periods.

COURSE INSTRUCTOR: Dr. Thomas Zwick  OFFICE:  science building room 212
PHONE: 657-2028
OFFICE HOURS: please make an appointment for all office hours