

CASPER COLLEGE COURSE SYLLABUS  
**EXTR1500 Introduction to Extractive Resources**

**Semester/Year: Fall 2015**

**Lecture Hours: 3**

**Lab Hours: 0**

**Credit Hours: 3**

**Class Time: 1:30-3:00pm**

**Days: MW**

**Room: GW210**

**Instructor's Name: Ken Kreckel**

**Instructor's Contact**

**Office Phone: 268 3457**

**Email:**

**Information: 307 251 1370**

kkreckel@caspercollege.edu

Email preferred.

**Office Hours: 12:30-1:30pm PS115 MW [may conduct office hours in GW210]**

**Course Description:** This introductory Extractive Resources course offering is intended to provide an introduction to the entire field of extractive resources. This includes both the basics of the oil and gas industry as well as the various types of mining. A particular emphasis will be on the practices and impact of these industries on Wyoming.

**Statement of Prerequisites:** None

**Goal:** Upon completion of this course, the student will:

- Demonstrate knowledge of a wide variety of extractive resources produced in Wyoming
- Understand basic geologic principles applied to resource extraction
- Demonstrate knowledge of the value of extractive industries to Wyoming

**Outcomes:** Specifically the student will be able to:

- 1.Explain the basic concepts of geology.
- 2.Explain the basic concepts of oil and gas exploration
- 3.Explain the basic concepts of coal and coal bed methane deposits
- 4.Explain the basic concepts of uranium accumulations
- 5.Explain the basic concepts of trona, bentonite and other industrial minerals
- 6.Explain the basic concepts of diamonds, gold, and precious mineral deposits
- 7.Explain the relative cost and value of producing energy minerals in Wyoming
- 8.Explain the methods of drilling and producing oil, gas, and coal bed methane
- 9.Explain the methods used to mine coal, trona, bentonite, oil shale, industrial minerals, and precious minerals
- 10.Explain the economic value of extractive resources within the state of Wyoming

**Course Objectives:** as above

**Methodology:** The course is divided into weeks [see main page] which correspond to the major topics on the syllabus. Each week will have some combination of the following:

1. Reading assignment
2. Power point presentation [.pdf]
3. Online activity: either a learning site, enrichment, or other relevant site
4. Other activity: problem solving, mapping or chart example, etc.
5. Discussion forum [online]: On some weeks I will post a series of questions on the forum covering the major points for that week. Participation is mandatory and a portion of your grade will be based on the quality of your participation [see Forum Rubric example]
6. Test or quiz periodically

**Evaluation Criteria:** Quizzes and tests will be the main criteria; two or three major exams comprise much of the final grade. Secondary criteria include class participation and activities. However it is essential the student complete all assignments in order to perform well on the tests.

**Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.**

**Required Text, Readings, and Materials:** Selley, Richard. Elements of Petroleum Geology, 2nd ed. It should be easily available on any online store. The mining text will be given as handouts.

**Class Policies: Last Date to Change to Audit Status or to Withdraw with a W Grade:** as per Casper College policies (withdrawal deadline; see: “Admission and Registration – Schedule Changes” in the catalog)

**Student Rights and Responsibilities:** Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

**Chain of Command:** If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

**Academic Dishonesty:** (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

**Official Means of Communication:** Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

**ADA Accommodations Policy:** If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, [bheuer@caspercollege.edu](mailto:bheuer@caspercollege.edu). The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

**Calendar or schedule indicating course content:**

The course Moodle page will serve as a constantly updated detailed course summary. Here's a brief summary:

1. Introduction to the extractive industries
2. Basics of geology
3. Hydrocarbons: properties, environment, Exercise—basin modeling;PVT diagrams
4. Reservoirs, traps, and seals Exercises—N Sea; cores
5. Stratigraphy: rocks, systems and basins
- 6 Exploration for hydrocarbon accumulations Exercises—well log correlation;seismic
- 7 Drilling and production; Oil fields Exercises— decline curves;log analysis
- 8 Unconventional oil & gas, Midterm test Exercises—TBA
- 9 Petroleum prospects, economics and risk Exercises—risk, economics
- 10 Introduction to Mining Exercise: TBA
- 11 Mineral Deposits Exercise: TBA
- 12 Prospecting and exploration Exercise: Exploring for copper
- 13 Underground mining Exercise: Tungsten mining
- 14 Surface mining (coal, uranium, stone and rock) uranium solution mining  
Exercise: Mapping coal seams
- 15 Solution Mining & Special Topics
- 16 Final exam