Instructor: Dr. Janok P. Bhattacharya, GSB/210, x23528, e-mail: bhattaj@mcmaster.ca
Meeting Times: Tuesday and Thursday 2:30-3:20, BSB B142
Thursday 9:30-11:20 am, GS 102
NOTE: I will lecture during the lab period. There will be assignments, but no traditional lab per se.

Course Objectives
This course will describe and explain the origin and evolution of sedimentary basins in a global plate-tectonic context, based upon their structural and stratigraphic styles. Factors that affect basin evolution, such as sea-level change, sediment supply, climate change, and mantle-lithospheric processes will be discussed. A review of the principles of sequence stratigraphy and petroleum systems analysis and its application to petroleum exploration and hydrogeology will be explored. The course will cover the fundamentals of petroleum geology; source rock, reservoir, and trap studies. Practical exploration methods such as subsurface stratigraphy and mapping.

Course Format
Two one-hour lectures periods per week and a 2 hour lab period. I will lecture in the lab periods. The lab periods will focus on assignments that emphasize basin analysis tools and techniques, including well log interpretation, seismic data analysis and interpretation, petroleum geochemistry analysis, geothermal gradients, fluid potential, and hydrocarbon prospecting.

Course Evaluation
Assignments 40%
Quizzes 20%
Final exam 40%

Lecture and Lab Schedule:
The following is a general outline of the planned lecture topics. We may spend more or less time on some aspects as time permits.
Week: | Lecture Topics: | Lab Assignments: |
---|---|---|
1. Jan. 5 | 1. Introduction | |
2. Jan 10/12 | 2. Basins and Plate Tectonics | 1. Basin Types |
5. Jan 31/2 | 5. Well Logs | 2. Well Log Interpretation |
8. Feb 20-24 | Reading Week | 3. Seismic Interpretation |
10. Mar 14/16 | 10. Traps and Seals | 5. Correlation and mapping |
11. Mar 21/23 | 11. Unconventional Resources (heavy oil) | 6. Prospecting |

Quiz and Lab Exam Dates:
- **Mid-term Quiz:** November 3rd
- **Final Exam:** Scheduled by registrar

**Avenue Website**
Lecture slides will be posted periodically to Avenue in PDF format. Downloading the lecture slides is not a substitute for attending lectures; the lecture slides are only a summary of what is discussed in class - you will need to take lecture notes and read the text to expand on the lecture slides.

**Recommended Texts**

**Statement on Academic Dishonesty**
Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of a academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at [http://www.mcmaster.ca/senate/academic/ac_integrity.htm](http://www.mcmaster.ca/senate/academic/ac_integrity.htm)
The following illustrates only three forms of academic dishonesty:
- **Plagiarism**, e.g. the submission of work that is not one's own or for which other credit has been obtained.
- Improper collaboration in group work. Copying or using unauthorized aids tests and examinations.
The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

POLICY ON ABSENCES AND MISSED WORK
McMaster Student Absence Forms (MSAF)
If you miss a lab or test for a legitimate reason (e.g. illness or other extenuating circumstances) you must file documentation using the McMaster Student Absence Form (MSAF). The form is available online (https://pinjap01.mcmaster.ca/msaf/) and can be used to report absences of up to 3 days. A maximum of 1 MSAF may be filed per term but not during final exam periods. If you are absent for more than 3 days, or exceed 1 MSAF request per term, you must visit the Associate Dean’s Office.

Note that you do not need a doctor’s note when using the MSAF. If there are extenuating circumstances for an absence that you would like to discuss, feel free to email me or see me after lecture.

Missed Work and Tests
If you have missed a lab or a mid-term test and have submitted a MSAF, the marks will be applied to your final exam. For example, if your final exam was worth 45% and you miss one lab worth 10% your final exam will be increased to 55% (45%+10% = 55%). The MSAF must be submitted no more than 1 week after the absence or due date for missed work (i.e. you cannot submit the form at the end of term for missed work).

A grade of zero will be given for missing work or missed tests if no MSAF (or other documentation from the Associate Dean) has been received.

Late Work
Labs or assignments submitted late will receive a penalty of 10% per day and will not be accepted more than four days beyond the deadline. Labs submitted after this time will automatically receive a grade of zero unless a MSAF has been filed. All late labs must be handed into the TA or placed in the 3E03 drop box on the 2nd floor of the General Science Building (GSB). Note: there is no access to the drop boxes after 4:30 p.m. or on weekends but there is an after-hours drop box on the 2nd floor of GSB just inside the door on the west side of the building.