TRENT UNIVERSITY

Department of Physics and Astronomy
Trent University

PHYS 2090Y: Physical Science for Teacher Education
2010-11 FW
Peterborough

Instructor: Johann Beda	**Email:** jbeda@trentu.ca	**Telephone:** 748-1011 x7279
Campus: Peterborough	**Office Location:** SC 318 or SC 326	**Office Hours:** By Appointment

Departmental Secretary: Gina Collins	**Email:** physics@trentu.ca
Office Location: SC 327	**Telephone:** 748-1011 7715

Teaching Assistant: Jeffrey Philippson	**Email:** jeffreyphilippson@trentu.ca
Teaching Assistant:	**Email:**

Course Description: This is a hands-on, lab course designed to meet the needs of future elementary teachers. We meet for a three hour session each class. We cover selected topics taken from or related to the Ontario Curriculum for grades 1-8 where basic concepts are often misunderstood; these may be taken from Light, Electricity, Motion, and Forces.
Students will work with their classmates to investigate physical systems and develop their own models to explain how they work, and refine those models through guided activities and group and classroom discussions.

Course Pre-requisites: None. Students majoring in a physical science or maths are excluded. It is assumed that all students plan to become elementary school teachers.

Course Fees: $35 printing and lab resources fee. Make cheques payable to "Trent Univeristy Department of Physics and Astronomy". If you need a receipt, attach a note to your payment with your name, Trent email address, and student number.

Course Format:
Please check http://www.trentu.ca/admin/mytrent/Timetable/TimeTableGen0.htm **to confirm times and locations.**

Type	Day	Time	Location
Lab Section A	Thursday	09:00 -12:00	SC 305
Lab Section B	Thursday	13:00 -16:00	SC 305

Course Evaluation:
Course activities include: daily hands-on lab exercises, worksheets and classroom participation; daily homework assignments; daily personal journal entries; essay style assignments; three quizzes; and a final exam.
Note: departmental policy requires that a minimum of 35% must be obtained on the quiz and final exam components to pass this course. If not, a course grade of 45% is the maximum that can be assigned.
Detailed weightings were decided by the class after the start of the course.

Type of	Weighting	Due Date
Labs (drop lowest)	34%	in class, that day
Homework (drop lowest)	12%	in class, next class
Journals	9%	in class, that day
Assignments (three)	20%	approx Oct, Feb, April
Quizzes (three)	13%	approx Dec, Feb, April
Final Exam	12%	exam period in April
Total	**100%**	

The mid-course grade (which does not impact the final grade) will be calculated based on the weightings of all graded materials up to that point, converted to a percentage. Thus, for seven homework assignments, seven labs, one assignment and one quiz available for the calculation, the weightings as above would give a score as follows:

34 x (7/15) - Labs
12 x (7/15) - Homework
20 x (1/3) - Assignments
13 x (1/3) - Quiz

32.4667 - Total

Required Texts: (Provided in class upon payment of fee)
Title: *Powerful Ideas in Physical Science*
Author: American Association of Physics Teachers

MyLearningSystem: Online resources are available including audio/video files, review exercises, class discussion forums, course calendar, and online assignment submissions. Access to this system is required for some aspects of the course. Some material may also be available at http://www.trentu.ca/physics/jbeda/PHYS2090Y/

Department and/or Course Policies:
Departmental policy requires that a minimum of 35% must be obtained on the quiz and final exam components to pass this course. If not, a course grade of 45% is the maximum that can be assigned.

Due to the nature of the course activities, group work, and equipment and space limitations, there are no simple ways to make up for missed in-class activities - attendance at and participation in all classes is required to complete the course material.

Assignments are submitted the initial time for peer editing, returned by the peer editor to the author the next class and then submitted a final time the following class for grading by the instructor. Late initial submissions may not be accepted since a peer editor may not be available and thus the author may lose the opportunity to do peer editing of someone else's work and thus the marks for that portion of the assignment (15% of the assignment total). Late or non return of the author's paper by the peer editor will result in the peer editor being penalized 200% of the grade for the editing portion of the assignment (2 x 15% = 30% of the assignment total). A penalty of 20% per day of the total will be applied to a late Final Submission.

University Policies

Academic Integrity:
Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offence and carries penalties varying from a 0 grade on an assignment to expulsion from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University's *Academic Integrity Policy*. You have a responsibility to educate yourself – unfamiliarity with the policy is not an excuse. You are strongly encouraged to visit Trent's Academic Integrity website to learn more: http://www.trentu.ca/academicintegrity/.

Access to Instruction:
It is Trent University's intent to create an inclusive learning environment. If a student has a disability and/or health consideration and feels that he/she may need accommodations to succeed in this course, the student should contact the Disability Services Office (BL Suite 109, 748-1281, disabilityservices@trentu.ca) as soon as possible. Complete text can be found under Access to Instruction in the Academic Calendar.

Week-by-week schedule:

See the online calendar tool of *MyLearningSystem* for up-to-date scheduling information. The general schedule we will follow, subject to modifications as the class progresses, will be:

Fall Semester:

Week 1	Introductory exercises
09/08	Start Lab L1
Week 2	Finish Lab L1
09/15	Start Lab L2
Week 3	Finish Lab L2
09/22	
Week 4	Start Lab L3
09/29	Assignment 1 Initial Due Date
Week 5	Finish Lab L3
10/06	Start Lab L4
	Assignment 1 Peer Editing Due
Week 6	Finish Lab L4
10/13	Assignment 1 Final Due Date
Week 7	Start Lab L5
10/20	
Fall Reading Week	
10/22 - 10/30	
Week 8	Finish Lab L5
11/03	Start Lab L6
Week 9	Finish Lab L6
11/10	Start Lab L7
Week 10	Finish Lab L7
11/17	
Week 11	Start Lab E1
11/24	
Week 12	Quiz 1 - Light
12/01	Finish Lab E1
Winter Break	

Spring Semester:

Week 13	Start Lab E2
01/12	
Week 14	Finish Lab E2
01/19	Start Lab E3
Week 15	Finish Lab E3
01/26	Assignment 2 Initial Due Date
Week 16	Start Lab E4
02/02	Assignment 2 Peer Editing Due
Week 17	Finish Lab E4
02/09	Assignment 2 Final Due Date
Week 18	Start Lab E5
02/16	Start Lab Ma1
Spring Reading Week	
02/18 - 02-26	
Week 19	Finish Lab Ma1
03/01	Start Lab Ma2
Week 20	Quiz 2 - Electricity
03/08	Start Lab Ma2
Week 21	Finish Lab Ma2
03/15	Assignment 3 Initial Due Date
Week 22	Start Lab Ma3
03/22	Assignment 3 Peer Editing Due
Week 23	Finish Lab Ma3
03/29	Assignment 3 Final Due Date
	Review
Week 24	Quiz 3 - Levers, Pulleys, Gears
04/05	Review
Final Exam, return of all graded materials	