



# Physics 30 Course Outline

LINDSAY THURBER COMPREHENSIVE HIGH SCHOOL  
SCIENCE DEPARTMENT

**TEACHER** Mr. R. Mueller

**ROOM** 1307

## COURSE DESCRIPTION

### Unit 1: Momentum and Impulse

**Overview:** In this unit, Newton's second law of motion is linked to the concepts of momentum and impulse.  
**General Outcomes**

1. *Students will* explain how momentum is conserved when objects interact in an isolated system.

### Unit 2: Forces and Fields

**Overview:** In this unit, students investigate electric and magnetic forces and fields and their applications in technological devices.

**General Outcomes:** There are three major outcomes in this unit. *Students will:*

1. explain the behaviour of electric charges, using the laws that govern electrical interactions
2. describe electrical phenomena, using the electric field theory
3. explain how the properties of electric and magnetic fields are applied in numerous devices.

### Unit 3: Electromagnetic Radiation

**Overview:** In this unit, students study the nature and characteristics of electromagnetic radiation (EMR), using the wave and photon models of light.

**General Outcomes:** There are two major outcomes in this unit. *Students will:*

1. explain the nature and behaviour of EMR, using the wave model
2. explain the photoelectric effect, using the quantum model.

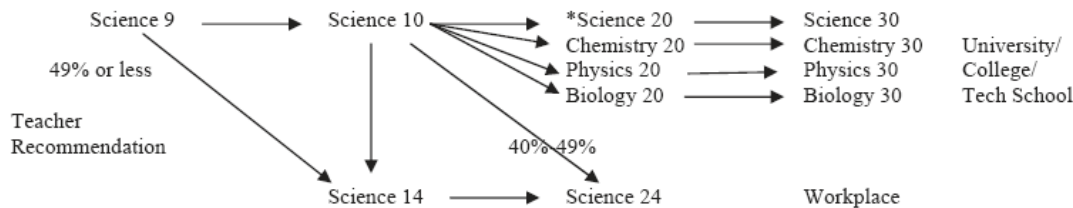
### Unit 4: Atomic Physics

**Overview:** In this unit, students study the development and modification of models of the structure of matter.

**General Outcomes:** There are four major outcomes in this unit. *Students will:*

1. describe the electrical nature of the atom
2. describe the quantization of energy in atoms and nuclei
3. describe nuclear fission and fusion as powerful energy sources in nature
4. describe the ongoing development of models of the structure of matter.

## PREREQUISITE



- A mark of 60% in Science 10 is recommended for entrance to these courses. Students may move from Chemistry 20, Physics 20 or Biology 20 to Science 30.

## MATERIALS

**GENERAL** Binder, agenda, paper, pen, pencil, eraser, calculator, formula sheet, textbook.

**TEXTBOOK** *Pearson Physics*, Ackroyd, Anderson, Berg, Martin, McGuire, Sosnowski, Sjojska and Wolfe.

## EVALUATION

The purpose of evaluation is to identify the extent of the curricular objectives that you (the learner) have demonstrated and for me (the instructor) to provide constructive and specific feedback that focuses on success and areas for improvement against curricular objectives.

|                          |     |
|--------------------------|-----|
| Exams:                   | 50% |
| Daily Science Activities | 10% |
| Assignments/Labs:        | 10% |
| Diploma Exam:            | 30% |

During assessment practices there are multiple opportunities to address curricular objectives, if however you (the learner) are absent from class the following will occur:

### MISSED OR LATE ASSIGNMENTS, LABS OR DAILY WORK

Addressing the four foundations of the science curricula (STS, Knowledge, Skills, and Attitudes) requires daily science activities that are conducted within or outside the classroom. Feedback for these activities is immediate and addresses skills and attitudes and cannot be reproduced. If the activity is not complete or absence is unverified a grade of "0" (zero) will be recorded in Gradebook. If the absence is verified an "e" will be recorded in Gradebook.

Attendance is required at laboratory activities. If possible, and the absence is verified, students will be provided with the data from the laboratory activity and be required to complete the laboratory report for the next class day to receive credits. If this is not possible and the absence is verified the laboratory report will be excused and an "e" will be recorded in Gradebook. If the absence is unverified a mark of "0" (zero) will be recorded in Gradebook.

Late assignments and labs will be accepted in cases of verified absences, and are due immediately upon returning to class. If assignments are late for unacceptable reasons the policy is as follows:

- 1<sup>st</sup> day late – 10% deduction
- 2<sup>nd</sup> day late – additional 10% deduction
- 3<sup>rd</sup> day late – not accepted unless student has made arrangements with teacher

Please discuss *special circumstances* with the teacher to see if an exception to this policy might apply.

### MISSED EXAMS

If a student misses an exam, and the absence is verified, the student will be required to write the exam at the first opportunity. The exam will be written at the discretion of the instructor either during class, during lunch, or after school. A mark of "NR" will be recorded in Gradebook until the exam has been completed. If a student misses an exam and the absence is unverified, the student forfeits the exam and a mark of zero will be recorded.

### CLASSROOM/LAB RULES

- It is the student's responsibility to have a parent/guardian verify absences (attendance line 314-2017).
- Arrive on time. When the bell goes, be in your desk, with your books opened, ready to start the class. If lateness is unavoidable, please knock, and then wait quietly until I admit you to class.
- No food or drinks in class with the exception of water and healthy snack.
- Phones and mp3 players are to be turned off and out of sight unless permission is given to use them.
- No food or drinks during labs
- You are expected to complete all homework assignments, whether they are taken in for marks or not. Class time will frequently be given to do your assignments. Please stay *on task* during these times. If you finish before the rest of the class, please use the extra time productively.
- Class time should not be used for washroom visits.
- Please do not write on, or in any way deface desks, bulletin boards, etc. Please dispose of trash by carrying, *not throwing*, to the proper receptacle. Recycle Please! Please note the bins for paper and cans/bottles.

### STUDENTS AIDS

#### EMAIL

- To access your email at home use <http://webmail.rdpsd.ab.ca/login>

#### GRADES

- To access your grades online use <http://elink.rdpsd.ab.ca/>

#### SCHOOL FOLDER

- To access your school folder outside LTCHS use <https://portal.rdpsd.ab.ca/>