Calgary Board of Education

Nelson Mandela High School
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Physics 30 Course Outline

Teacher Contact Information:

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Over the course of the school year, Nelson Mandela High School teachers will maintain an online course presence containing materials, resources, assignments and supports through our D2L environment. It is important for students to take an active role in their learning and to stay current in their schoolwork using D2L if they are away for any reason.

Course Description:

"The secondary science program is guided by the vision that all students have the opportunity to develop scientific literacy. The goal of scientific literacy is to develop the science-related knowledge, skills and attitudes that students need to solve problems and make decisions, and at the same time help them become lifelong learners - maintaining their sense of wonder about the world around them."

For a more detailed list of curricular outcomes, please see the Physics 30 Program of Studies. **Please note that there will be a diploma exam at the end of this course.**

Key Links:

- NMHS Code of Conduct
- Digital Citizenship
- Academic Integrity
- Assessment Rules

Assessment:

At Mandela, all courses will use the CBE High School Proficiency Scale to assess tasks:

Beginning		Developing		Proficient		Exemplary	
1	2	1	2	1	2	1	2
The student demonstrates a level of understanding and/or skill that is **not yet meeting** expectations of the course outcomes. ▪ The quality of work may be **vague** and/or **undeveloped**. ▪ Targeted adjustments to planning and instruction will be necessary for further learning in this area.		The student demonstrates a **basic level** of understanding and/or skill that meets expectations of the course outcomes. ▪ The quality of work may be **adequate** and/or **concrete**. ▪ Adjustments to planning and instruction may be necessary for further learning in this area.		The student demonstrates a **well-developed** level of understanding and/or skill that meets expectations of the course outcomes. ▪ The quality of work may be **clear** and/or **well-reasoned**. ▪ The student can be confident of being prepared for further learning in this area.		The student demonstrates a **mastery** level of understanding and/or skill that meets expectations of the course outcomes. ▪ The quality of work may be **perceptive** and/or **insightful**. ▪ The student can be confident of being prepared for further learning in this area.	
20%	40%	55%	65%	75%	85%	95%	100%

For more information about the proficiency scale and assessment, please click here.

List of Physics 30 Outcomes:

Outcome Label	Description of Outcome	Unit Name
A1	Explain how momentum is conserved when objects interact in an isolated system.	Momentum & Impulse
B1	Explain the behaviour of electric charges, using the laws that govern electrical interactions.	Electrostatics
B2	Describe electrical phenomena, using the electric field theory	
B3	Explain how the properties of electric and magnetic fields are applied in numerous devices.	Electromagnetism
C1	Explain the nature and behaviour of EMR, using the wave model.	Electromagnetic Radiation (EMR)
C2	Explain the photoelectric effect, using the quantum model.	
D1 & D2	Describe the electrical nature of the atom; describe the quantization of energy in atoms and nuclei.	Atomic, Quantum, & Particle Physics
D3	Describe nuclear fission and fusion as powerful energy sources in nature.	
D4	Describe the ongoing development of models of the structure of matter.	
SK1	Initialize & Plan: Ask questions about observed relationships, and plan investigations of questions, ideas, problems and issues.	Skills
SK2	Perform & Record: Conduct investigations into relationships between and among observable variables, and use a broad range of tools and techniques to gather and record data and information.	
SK3	Analyze & Interpret: Analyze data and apply mathematical and conceptual models to develop and assess possible solutions.	