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Westside Secondary School

Orangeville, Ontario, Canada

519-938-9355 www.ugdsb.on.ca/westside

Course: SPH4C	**Teacher**	**Phone Extension**	**Email**
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Course Description: This course develops students' understanding of the basic concepts of physics. Students will explore these concepts with respect to motion; mechanical, electrical, electromagnetic, energy transformation, hydraulic, and pneumatic systems; and the operation of commonly used tools and machines. They will develop their scientific investigation skills as they test laws of physics and solve both assigned problems and those emerging from their investigations. Students will also consider the impact of technological applications of physics on society and the environment.

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Prerequisite: Grade 10 Applied Science (SNC2P)

Big Ideas: The curriculum in each unit targets "Big Ideas" that are laid out by Ontario's Ministry of Education and adapted by Westside teachers. The following chart outlines the Big Ideas being explored and evaluated in each unit of this course. For more information on the overall course expectations, visit http://www.edu.gov.on.ca/eng/curriculum/secondary/2009science11_12.pdf.

Unit of Study	**Big Ideas**
Motion and Its Applications	● All motion involves a change in the position of an object over time. ● Motion can be described using mathematical relationships. ● Many technologies that utilize the principles of motion have societal and environmental implications.
Mechanical Systems	● Mechanical systems use force to do work. ● The operation of mechanical systems can be described using mathematical relationships. Friction is a force that influences the design, use, and effectiveness of mechanical systems. ● Mechanical systems can be used to address social and environmental challenges.
Energy Transformations	● Energy can be transformed from one type to another. ● Systems that involve energy transformations are never 100% efficient. ● Although technological applications that involve energy transformations can affect society and the environment in positive ways, they can also have negative effects, and therefore must be used responsibly.
Hydraulic and Pneumatic Systems	● Fluids under pressure can be used to do work. ● Fluids under pressure have predictable properties and many technological applications. ● The uses of hydraulic and pneumatic systems can have social and economic consequences.
Electricity and Magnetism	● Relationships between electricity and magnetism are predictable. ● Electricity and magnetism have many technological applications. ● Technological applications that use electricity and magnetism can affect society and the environment in positive and negative ways.

Instructional Strategies: Westside teachers use a variety of instructional strategies to help students develop and improve skills in the following areas: character, citizenship, communication, critical thinking and problem solving, collaboration and teamwork, and creativity and imagination.

Achievement Categories: Student learning is assessed and evaluated in a balanced manner with respect to the following four interrelated categories of knowledge and skills.	**Knowledge and Understanding** **Thinking and Inquiry** **Communication** **Application**

Assessment and Evaluation: Assessments for and as learning are used to improve student success by providing opportunities to demonstrate understanding of course expectations prior to the evaluation of learning. Evaluations of learning are where students demonstrate their understanding of Big Ideas and key expectations. Failure to complete an evaluation of learning may result in the credit not being granted because certain expectations of the course have not been met.

Term Work Evaluation: 70%	Final Evaluation(s): 30%
Motion Unit: Test and Lab Assessment Mechanical Systems Unit: Test and Lab Assessment Energy Transformations Unit: Test and Inquiry Activity Hydraulics and Pneumatics Unit: Test and Research Assignment Electricity and Magnetism Unit: Test and Research Assignment	5% Crib Note 25% Exam

Late Work

- Students are expected to complete all assigned work and submit it by the teacher's established due date. Every attempt will be made to encourage students to complete all assigned work on time so their grade represent their actual achievement. For late and missed summative assessments, please see the ***Westside Students' Contract for Missing Evidence of Learning***.

Safety Agreement

- All students will receive a safety agreement and will sign and return the UGDSB Student Safety Record.

Textbook

- Nelson Physics 12 – College Preparation – replacement fee for a lost or damaged textbook is $90.

Enhancement Fee

- Voluntary enrichment fees may apply to this course. If a student does not pay, they will not complete the activity but will still be able to meet the course expectations.
- Potentially $5 for field trip to the arena.

Electronic Devices

- The science department at Westside S.S. has a policy that no electronic devices (e.g. cell phones, tablets, iPods, mp3 players, etc.) are allowed during evaluations. For this reason, students are reminded to bring a scientific calculator when needed.

Classroom Rules

- Students are expected to follow the rules of conduct, as referenced on the school's web site: http://www.ugdsb.on.ca/westside/.

In addition to these general rules of Westside Secondary School, the rules for the science classroom are as follows:

- no food or drink of any kind is allowed in a science classroom
- respect the people, equipment, and furnishings of the science classroom
- immediately stop any activity and give your attention to the teacher when asked to do so
- summative evaluations of learning will not leave the classroom, but are available for students to discuss with the teacher