

Sustainability in Today's Modern World

Mechanical and Transportation Technology

Course Number: PHY9182	Contribution to Program: General Education	Normative Hours: 45
Applicable Program(s): 0550X01FWO EME Technician - Robotics	AAL: 2	Core/Elective: Core
Prepared by: Joel Smith Instructor		Approval Date: 04/01/2013
Co-Requisites N/A		Approved by: Misheck Mwaba, PhD., P.Eng. Chair, Mechanical and Transportation Technology
Pre-Requisites N/A		Approved for Academic Year: 2012-2013

COURSE DESCRIPTION

Social and economics aspects of sustainability are examined. Students explore a variety of topics that examine the ethics of current industry and how one issue can affect many other elements. Topics include: what is sustainability; how does it affect me in my home, my employer and our government. Sustainability is it economically feasible. Making informed choices about sustainability for green energy, waste control and water conservation can only improve the planet.

RELATIONSHIP TO VOCATIONAL LEARNING OUTCOMES

This is a general education course that supports learning in the following theme area: **Science and Technology**

T: Teach A: Assess CP: Culminating Performance

ESSENTIAL EMPLOYABILITY SKILLS

The course contributes to your program by helping you achieve the following Essential Employability Skills:	
1	Communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience.(T,CP)
2	Respond to written, spoken or visual messages in a manner that ensures effective communication.(T)
4	Apply a systematic approach to solve problems.(T,CP)
5	Use a variety of thinking skills to anticipate and solve problems.(T,CP)
7	Analyze, evaluate and apply relevant information from a variety of sources.(T,CP)
8	Show respect for diverse opinions, values, belief systems and contributions of others. (T)
10	Manage the use of time and other resources to complete projects.(T)
11	Take responsibility for one's own actions, decisions and consequences.(T,A,CP)

T: Teach A: Assess CP: Culminating Performance

COURSE LEARNING REQUIREMENTS/EMBEDDED KNOWLEDGE AND SKILLS

COURSE LEARNING REQUIREMENTS When you have earned credit for this course, you will have demonstrated the ability to:	EMBEDDED KNOWLEDGE AND SKILLS
1. Examine what the definition of sustainability means.	<ul style="list-style-type: none"> 1 Learn how sustainability affects both student life and work life. 1 Assess the benefits as to why sustainability is important to a potential employer. 1 Examine the true history of how society has moved towards operating in a more sustainable way.
2. Discuss the past and present ethics of current industry.	<ul style="list-style-type: none"> 1 The impact of sourcing specific materials. 1 The safety of products that are currently in use.

	<ul style="list-style-type: none"> 1 Positive/negative impacts from materials that have reached their 'end-of-use'.
3. Weigh the pros and cons of implementing new sustainability models in your current work.	<ul style="list-style-type: none"> 1 Local, national, and international laws are examined. 1 Protecting your work outside your own country. 1 Open source licenses. 1 Dealing with various copyrights, patents and trade secrets. 1 Understanding key responsibilities of engineers and technicians.
4. Work through approaches to solving current world problems.	<ul style="list-style-type: none"> 1 Gather information from the internet, honestly and quickly. 1 Assess the accuracy, quality, and validity of the information. 1 Determine the best solution based on cost & environmental impact. 1 Meet deadlines.
5. Evaluate the current state of industry and today's manufactures.	<ul style="list-style-type: none"> 1 Learn to maximize the cycle of innovation 1 Examine how, as a society, we ended up where we are. 1 Examine the basic lifecycle model. 1 Examine mini-lifecycles of consumables as well as various supply chains. 1 Examine Hidden impacts & services while looking at the design and prototypes of various products.

LEARNING RESOURCES

An electronic version of the textbook is made available online. Different internet medias are used for case studies.

LEARNING ACTIVITIES

During this course, you are likely to experience the following learning activities:

- 1 Independent research
- 1 Apply class material to real life scenarios
- 1 Completing online exercises and quizzes
- 1 Searching web sites
- 1 Reflect on real life scenarios and the challenges that face each decision made

EVALUATION/EARNING CREDIT

The following will provide evidence of your learning achievements:	This activity validates the following Course Learning Requirements and/or Essential Employability Skills:
16 Tests (On-line) Test 1 ----- 3% Test 2 ----- 3% Test 3 ----- 3% Test 4 ----- 3% Test 5 ----- 3% Test 6 ----- 3% Test 7 ----- 3% Test 8 ----- 3% Test 9 ----- 3% Test 10 ----- 3% Test 11 ----- 3% Test 12 ----- 3% Test 13 ----- 3% Test 14 ----- 3% Test 15 ----- 3% Test 16 ----- 3%	<ul style="list-style-type: none"> 1 Examine what the definition of sustainability means. - [CLR 1] 1 Discuss the past and present ethics of current industry. - [CLR 2] 1 Analyze, evaluate and apply relevant information from a variety of sources. - [EES 7] 1 Manage the use of time and other resources to complete projects. - [EES 10] 1 Take responsibility for one's own actions, decisions and consequences. - [EES 11]

Total -----48%	
3 Assignments	
Assignment 1 ----- 15%	
Assignment 2 ----- 15%	
Assignment 3 ----- 22%	
Total----- 52%	
	<ul style="list-style-type: none"> 1 Weigh the pros and cons of implementing new sustainability models in your current work. - [CLR 3] 1 Work thought an approaches to solving current world problems. - [CLR 4] 1 Evaluate the current state of industry and today's manufactures. - [CLR 5] 1 Communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience. - [EES 1] 1 Respond to written, spoken or visual messages in a manner that ensures effective communication. - [EES 2] 1 Apply a systematic approach to solve problems. - [EES 4] 1 Use a variety of thinking skills to anticipate and solve problems. - [EES 5] 1 Analyze, evaluate and apply relevant information from a variety of sources. - [EES 7] 1 Show respect for diverse opinions, values, belief systems and contributions of others. - [EES 8] 1 Manage the use of time and other resources to complete projects. - [EES 10] 1 Take responsibility for one's own actions, decisions and consequences. - [EES 11]

COLLEGE GRADING NUMERICAL EQUIVALENT TABLE

Final Grade	Mark Equivalent	Numeric Value	Final Grade	Mark Equivalent	Numeric Value
A+	90-100%	4.0	C+	67-69%	2.3
A	85-89%	3.8	C	63-66%	2.0
A-	80-84%	3.6	C-	60-62%	1.7
B+	77-79%	3.3	D+	57-59%	1.4
B	73-76%	3.0	D	53-56%	1.2
B-	70-72%	2.7	D-	50-52%	1.0
			F	0-49%	0
			FSP	0	0

PRIOR LEARNING ASSESSMENT AND RECOGNITION

Students who wish to apply for prior learning assessment and recognition (PLAR) need to demonstrate competency at a post-secondary level in all of the course learning requirements outlined above. Evidence of learning achievement for PLAR candidates includes:

- 1 Other
Please contact the coordinator for more information.

RELATED INFORMATION

The following information is course-specific:

See department related information below.

The following information is school/department-specific:

GENERAL CLAUSES - School of Advanced Technology

Harassment/Discrimination/Violence will not be tolerated. Any form of harassment (sexual, racial, gender or disability-related), discrimination (direct or indirect), or violence, whether towards a professor or amongst students, will not be tolerated on the college premises. Action taken will start with a formal warning and proceed to the full disciplinary actions as outlined in Algonquin College Policy - HR22.

Harassment means one or a series of vexatious comment(s) or conduct related to one or more of the prohibited grounds that is known or ought

reasonably to be known to be unwelcome/ unwanted, offensive, intimidating, derogatory or hostile.

This may include, but is not limited to: gestures, remarks, jokes, taunting, innuendo, display of offensive materials, offensive graffiti, threats, verbal or physical assault, academic penalties, stalking, slurs, shunning or exclusion related to the prohibited grounds.

For further information, a copy of the official policy statement can be obtained from the Student Association.

The Use of Electronic Devices, with the sound turned on, during classes is strictly prohibited. In particular, cell phones are not to be used to communicate during a class. The use of any electronic devices during exams and mid-term tests, other than those sanctioned by the faculty in charge of the examination, is strictly prohibited.

Anyone caught using a prohibited device will be considered to have plagiarized, and will be treated as such in accordance with College Plagiarism Policy. For further details on this directive, consult the Algonquin College Policy AA32 on the use of Electronic Devices in Class and Exams.

The School of Advanced Technology's Standard Operating Procedure on Plagiarism and Academic Honesty defines plagiarism as an attempt to use or pass off as one's own idea or product, work of another without giving credit. Plagiarism has occurred in instances where a student either directly copies another person's work without acknowledgement; or, closely paraphrases the equivalent of a short paragraph or more without acknowledgement; or, borrows, without acknowledgement, any ideas in a clear and recognizable form in such a way as to present them as one's own thought, where such ideas, if they were the student's own would contribute to the merit of his or her own work.

Plagiarism is one of the most serious academic offenses a student can commit. Anyone found guilty will, on the first offense, be given a written warning and an F on the plagiarized work. If the student commits a second offense, an F will be given for the course along with a written warning. A third offense will result in suspension from the program and/or the college.

For further details on this directive, consult the Algonquin College Policy - AA20 and the School of Advanced Technology's Standard Operating Procedure on Plagiarism and Academic Dishonesty.

Respect for Confidentiality

Students are required to respect the confidentiality of employer, client and/or patient information, interactions, and practices that occur either on Algonquin College premises, or at an affiliated clinical/field/co-op placement site. Concerns regarding clients, patients, and/or employer practices are to be brought to the attention of the program coordinator, or designated field/clinical/co-op placement supervisor so that they may be resolved collaboratively. Such concerns are not to be raised publicly either verbally, in writing, or in electronic forums. These matters are to be addressed through established program communication pathways

Disruptive Behaviour is any conduct, or threatened conduct, that is disruptive to the learning process or that interferes with the well-being of other members of the College community. It will not be tolerated.

Members of the College community, both students and staff, have the right to learn and work in a secure and productive environment. The College will make very effort to protect that right.

Incidents of disruptive behaviour must be reported in writing to the departmental Chair as quickly as possible. The Chair will hold hearings to review available information and determine any sanctions that will be imposed. Disciplinary hearings can result in penalties ranging from a written warning to expulsion.

For further details consult the Algonquin College Policy - SA07.

June 15, 2012

The following information is College-wide:

Email

Algonquin College provides all full-time students with an e-mail account. This is the address that will be used when the College, your professors, or your fellow students communicate important information about your program or course events. It is your responsibility to ensure that you know how to send and receive e-mail using your Algonquin account and to check it regularly.

Centre for Students with Disabilities (CSD)

If you are a student with a disability, it is strongly recommended that you identify your needs to the professor and the Centre for Students with Disabilities (CSD) by the end of the first month of the semester in order that any necessary support services can be arranged for you.

Academic Integrity* & Plagiarism*

Adherence to acceptable standards of academic honesty is an important aspect of the learning process at Algonquin College. Academic work submitted by a student is evaluated on the assumption that the work presented by the student is his or her own, unless designated otherwise. For further details consult Algonquin College Policies AA18 <http://www2.algonquincollege.com/directives/files/2012/04/AA18.pdf> and AA20 <http://www2.algonquincollege.com/directives/files/2011/08/AA20.pdf>

Student Course Feedback*

It is Algonquin College's policy to give students the opportunity to complete a course assessment survey in each course that they take which

solicits their views regarding the curriculum, the professor and the facilities. For further details consult Algonquin College Policy AA25
<http://www2.algonquincollege.com/directives/files/2011/10/AA25.pdf>

Use of Electronic Devices in Class*

With the proliferation of small, personal electronic devices used for communications and data storage, Algonquin College believes there is a need to address their use during classes and examinations. During classes, the use of such devices is disruptive and disrespectful to others. During examinations, the use of such devices may facilitate cheating. For further details consult Algonquin College Policy AA32
<http://www2.algonquincollege.com/directives/files/2011/11/AA32.pdf>

Transfer of Credit

Students, it is your responsibility to retain course outlines for possible future use to support applications for transfer of credit to other educational institutions.

* College policies (previously called directives) are under review and redesign. The term *directives* is being retired. As such, the policy classification nomenclature is in transition. Students, it is your responsibility to refer to the Algonquin College Directives/Policies website for the most current information available at: (<http://www2.algonquincollege.com/directives/>)