



Professional Engineers
and Geoscientists of BC

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February 28, 2011

Via Email: Lynn.Tremblay@engineerscanada.ca

Lynn Tremblay
Engineers Canada
1100 – 180 Elgin Street
Ottawa ON K2P 3K3

Dear Ms. Tremblay:

**Re: National Climate Change Action Plan, Proposed Syllabus for Course in Climate Change –
Comments from the Division of Environmental Professionals, the Environment Committee
and the Sustainability Committee**

Further to Ms. Tremblay's email of December 21, 2010, the Division of Environmental Professionals, the Environment Committee and the Sustainability Committee of the Association of Professional Engineers and Geoscientists of British Columbia have reviewed the proposed Syllabus Course for a Course in Climate Change dated December 2010.

Kindly find enclosed the comments of the Division and Committees on the proposed Course Syllabus.

Should you have any comments or queries, please do not hesitate to contact Gilbert Larocque, CD, P.Eng, LLB, Associate Director, Professional Practice. Mr. Larocque can be reached directly at 604-639-8178 or glarocque@apeg.bc.ca.

Yours truly,

Gilbert Larocque, CD, PEng, LLB
Associate Director, Professional Practice

**Comments from the Division of Environmental Professionals, the Environment Committee
and the Sustainability Committee
Association of Professional Engineers and Geoscientists of British Columbia
on Engineers Canada National Climate Change Action Plan, Proposed Syllabus for Course in
Climate Change dated December 2010**

Proposed Syllabus for Course in Climate Change [December 2010]		
Serial	Module	Comments
Comments from the Division of Environment Professionals (dEP)		
DEP1	1	The dEP recommends the following course content be added: <ul style="list-style-type: none"> ➤ Three technical/policy interventions in response to climate change: mitigation, adaptation and geoengineering
DEP2	2	The dEP recommends the following course content be added: <ul style="list-style-type: none"> ➤ Drivers of climate change: energy and non-energy systems
DEP3	3	The dEP recommends the following course content be added: <ul style="list-style-type: none"> ➤ Risks to government (e.g. municipal, provincial, federal); and ➤ Risks of geoengineering
DEP4	5	The dEP recommends the following course content be added: <ul style="list-style-type: none"> ➤ Understanding climate policy responses and interactions with policies in other domains (e.g. public health), potential co-benefits and potential unintended adverse outcomes
DEP5	5	In “Introduction to public policy and climate change”, include processes to: <ol style="list-style-type: none"> a) regulate emissions, such as technology standards, pricing emissions and quantity limits; and b) regulate land use and transportation to reduce energy and GHG-intensity of our economy).
DEP6	5	In “The main policy responses: mitigation, adaptation, geoengineering”, mention should be made that geoengineering is not just a policy response, it is a technical response as well.
DEP7	5	The item “Other strategies – Emissions trading, carbon taxes, carbon capture and offset projects, etc.” should be moved to this Module. Serial DEP9 refers.
DEP8	6	The dEP recommends the following course content be added: <ul style="list-style-type: none"> ➤ Demand Side Management (DSM) of energy and energy efficient engineering design as mitigation strategies
DEP9	6	The item “Other strategies – Emissions trading, carbon taxes, carbon capture and offset projects, etc.” should be moved to the Public Policy Response Module (Module 5). Serial DEP7 refers.
DEP10	7	The title of this Module should be modified to read: <p><u>7. Communication and Participation in Climate Change Decision-Making Processes by Engineers and Geoscientists</u></p>

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DEP11	7	<p>The item “Costing Considerations” should be renamed:</p> <ul style="list-style-type: none"> ➤ Economic Considerations (include direct costs and social costs) 																																													
DEP12	7	<p>The dEP recommends the following course content be added:</p> <ul style="list-style-type: none"> ➤ How engineers and geoscientists can participate in decision-making processes 																																													
DEP13	7	<p>The DEP recommends the following course content be added:</p> <ul style="list-style-type: none"> ➤ Framing geoengineering strategies for decision-makers and communicating roles and risks 																																													
DEP14	8	<p>Consideration should be given for time to be allotted during the course for students to produce these items or present topics.</p>																																													
DEP15	General	<p>The DEP suggests the relative weighting of modules as shown in Table 1 below.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Module #</th> <th style="text-align: center;">Suggested Re-order</th> <th style="text-align: center;">Weight</th> <th style="text-align: center;">Module</th> <th style="text-align: center;">Suggested Background of Instructor Comments</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">5%</td> <td style="text-align: center;">Introduction</td> <td>Engineering and interdisciplinary education and experience</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">10%</td> <td style="text-align: center;">Climate Science and Impacts</td> <td>Climate scientist</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">10%</td> <td style="text-align: center;">Risk Management and Climate Change</td> <td>Interdisciplinary (policy, business, engineering)</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> <td style="text-align: center;">20%</td> <td style="text-align: center;">Climate Change Adaptation – Tools and Strategies</td> <td>Engineering</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> <td style="text-align: center;">15%</td> <td style="text-align: center;">The Public Policy Response</td> <td>Policy specialist (economics, engineering, law, interdisciplinary, other as required)</td> </tr> <tr> <td style="text-align: center;">6</td> <td style="text-align: center;">4</td> <td style="text-align: center;">25%</td> <td style="text-align: center;">Climate Change Mitigation – Tools and Strategies</td> <td>Engineering</td> </tr> <tr> <td style="text-align: center;">7</td> <td style="text-align: center;">7</td> <td style="text-align: center;">10%</td> <td style="text-align: center;">Communicating Climate Change Issues to Decision Makers</td> <td>Communication specialist (politician, marketing, business, other as required)</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">8</td> <td style="text-align: center;">5%</td> <td style="text-align: center;">Final Case Analysis/Term Paper, Report and/or Presentation (<i>not included within Proposed Syllabus</i>)</td> <td>If presentations are required, they will consume some of the classroom hours</td> </tr> </tbody> </table> <p style="text-align: center;">Table 1: Suggested Module Weighting, Order and Instructor Background</p>	Module #	Suggested Re-order	Weight	Module	Suggested Background of Instructor Comments	1	1	5%	Introduction	Engineering and interdisciplinary education and experience	2	2	10%	Climate Science and Impacts	Climate scientist	3	3	10%	Risk Management and Climate Change	Interdisciplinary (policy, business, engineering)	4	5	20%	Climate Change Adaptation – Tools and Strategies	Engineering	5	6	15%	The Public Policy Response	Policy specialist (economics, engineering, law, interdisciplinary, other as required)	6	4	25%	Climate Change Mitigation – Tools and Strategies	Engineering	7	7	10%	Communicating Climate Change Issues to Decision Makers	Communication specialist (politician, marketing, business, other as required)	-	8	5%	Final Case Analysis/Term Paper, Report and/or Presentation (<i>not included within Proposed Syllabus</i>)	If presentations are required, they will consume some of the classroom hours
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Comments from the Environment Committee		
EC1	General	The course appears biased towards the anthropogenic causes of climate change. Because it forces the focus on mitigation rather than adaptation, this approach is problematic. It is possible that mitigation cannot reverse the trend. It is also possible that other systems are responsible for climate change and that a focus on mitigation diverts the needed attention on adaptation.
Comments from the Sustainability Committee		
SC1	General	In some disciplines, this course should be a core course rather than an elective. Such an approach will encourage that it be made a fourth-year level course rather than a graduate-level course. To appeal to associations and universities, the course could be broken down into modules for continuous professional development delivery.