

UNIVERSITY OF CALGARY  
FACULTY OF SCIENCE  
DEPARTMENT OF CHEMISTRY  
COURSE OUTLINE  
FALL 2017 – WINTER 2018

**Course:** CHEM 601/603

601/603 Coordinator	Analytical / Environmental	Inorganic	Organic	Physical A	Physical B
V. Thangadurai	K. Thurbide	G. Welch	D. Derksen	S. Trudel	J. MacCallum
ES656E	SB219	EEEL 546	SB 231	SB 417	BI 557
vthangad@ucalgary.ca	thurbide@	gregory.welch@	dderksen@	trudels@	justin.maccallum@

**Outline:**

- (i) Students will attend seminars by their peers and faculty on a weekly basis. These will be Departmental seminars or a speaker from their specific sub-section above when scheduled.

**Objectives:**

- (i) Students will be exposed to topical chemistry research.
- (ii) Students will gain experience at giving professional presentations, including brief instruction in best practices.
- (iii) Students will increase their proficiency at responding to questions, at being an active audience member, and at participating in group discussion.

**Regulations:**

- (i) A title and brief abstract of your talk must be given to the grad office and section coordinator, **at the absolute latest**, two weeks prior to your presentation. Failure to meet this deadline will result in the cancelation of your seminar.
- (ii) Attendance at the seminars is **mandatory**. You must let your Section Coordinator know if you will be absent or attending another section. You will not receive credit if you repeatedly fail to attend.
- (iii) One talk and a final research presentation are required for the M.Sc. program. Two talks and a Departmental research seminar for the Ph.D. program.
- (iv) One time during your graduate program, ideally before your first presentation, you must participate in a short workshop that covers communication best practices, basic proficiency with presentation software, and an exercise where you evaluate a mock talk based on the same criteria you will be evaluated on.
- (v) The content of the general research seminar (i.e. not the Final M.Sc. or Ph.D. departmental talk) will be decided in consultation with your supervisory committee. Topics should be relevant and useful to your project and scientific development, but not directly related to your research project. The aim is to learn something new that will help your development, rather than to present something you already know. The topic must also be approved by your section coordinator to avoid repetition of topics.

- (vi) The speaker will be expected to answer audience questions about the details of the presented work and its context and implications. The section coordinator will also facilitate a broader audience discussion on the topic.
- (vii) Your performance will be evaluated using the attached rubric. The final evaluation will be by the section coordinator, who will consult with the faculty in attendance. Supervisory committee members are encouraged to attend. Scores of below basic in more than one category, or an overall score below 20 / 40 will require repeating.
- (viii) As a courtesy to the speaker, electronic devices (phones, computers, tablets) **are banned** from the audience for 601/603, including for faculty.

**Format:**

- (i) Talks are to be formal. Use PowerPoint. It is solely your responsibility to ensure the room and projector are ready.
- (ii) The talk should be 30 mins followed by a 10-15 min discussion period.
- (iii) The first 10-12 min should focus on introduction, history, and context. The remaining time should be split between one or more recent (last 4-5 years) case studies from the literature. Generally, this should be two case studies, but in certain circumstances, a single case study or more than two case studies may be appropriate. This should be discussed and approved by your supervisory committee. You should not focus only on the methods and results. Put the research in context. Why should your audience care about this work? How does it advance chemistry?

Department Approval: Approved by Department Head

Date: September 7, 2017

## CHEM 601/ 603 Grading Rubric

	What is being evaluated?	Below basic (1 pt)	Basic (2 pts)	Proficient (3 pts)	Advanced (4 pts)
<b>Organization</b> <i>worth double</i>	<b>that the presentation is logically structured, designed to capture attention and promote information transfer, and properly timed.</b>	The audience cannot understand presentation because there is no logical sequence of information; and/or presentation length is much too long or much too short; and/or presented material was clearly not on topic or clearly not at a level appropriate for the target audience.	The audience has difficulty following presentation because speaker jumps around; and/or presentation was too long or short; and/or presented material varied from the topic, or varied from the level of the target audience.	The speaker presents information in a logical sequence which the audience can follow. The presentation was the correct length (27–33 mins). The presented material was on topic and at an appropriate level for the target audience.	The speaker presents information in logical, interesting sequence which the audience can follow. The presentation was the correct length (27–33 mins). The presented material thoroughly covers topic material at a level that is understandable and engaging for the target audience.
<b>Subject knowledge</b> <i>worth double</i>	<b>that the speaker has an appropriate depth of understanding of the topic, is accurate</b>	The student does not have grasp of information and core concepts are omitted or misunderstood; and/or scientific inaccuracies are found throughout the presentation; and/or no depth of understanding is evident.	The student is uncomfortable with information and struggles to explain core concepts; and/or some scientific inaccuracies are found in the presentation; and/or a limited depth of understanding is evident.	The student is at ease with information and comfortably explains core concepts. Few, minor scientific inaccuracies are found in the presentation. Significant depth of understanding is evident.	The student demonstrates full knowledge (more than required) in explaining core concepts. No scientific inaccuracies are found in the presentation. Depth of knowledge exceeding expectations is evident.
<b>Visual Aids and mechanics</b>	<b>that the speaker can use visual aids and / or animations to effectively communicate, and pays attention to details (proper grammar, slide layout)</b>	The speaker uses no relevant visual aids; the presentation has many spelling errors or grammatical errors; and/or the presentation is difficult to follow due to poor slide organization (bad slide layout, cut off or missing sections, large blocks of text, etc.).	The speaker uses few visual aids which relate to the presentation; and/or student does not adequately explain visual aids; and/or the visual aids are low quality or unclear. The presentation has some misspellings or grammatical errors; and/or presentation has some mistakes in slide organization (slide numbers missing, minor slide layout issues, text too small, etc.).	The speaker uses numerous visual aids which relate to the presentation and clearly explains these visual aids. The visual aids are high quality and clear; the presentation has very few misspellings or grammatical errors. Slide organization meets expectations (easy to follow slide layout, clear and concise text, descriptive slide titles, etc.).	The speaker uses numerous visual aids which relate to the presentation. The student clearly explains visual aids and uses them to reinforce verbal points. The visual aids are exceptional quality and can be thoroughly understood by the target audience. The presentation does not contain misspellings or grammatical errors. The slides are clean, well-organized, and exceed expectations (clear and aesthetically pleasing slide layout, creative use of presentation software, balance achieved between verbal and visual information, etc.)

## CHEM 601/ 603 Grading Rubric

	What is being evaluated?	Below basic (1 pt)	Basic (2 pts)	Proficient (3 pts)	Advanced (4 pts)
<b>Eye contact and verbal techniques</b>	<b>that the speaker engages with the audience, can be clearly heard while speaking at an appropriate pace &amp; volume</b>	The speaker makes no eye contact with audience, mumbles; incorrectly pronounces many terms; speaks too quietly for audience in the back to hear; and/or speaks much too slowly or too quickly to be readily understood.	The speaker occasionally makes eye contact with audience, mostly reading from notes and/or looking at the screen. The speaker's voice is too low for audience members to hear clearly; and/or the speaker incorrectly pronounces some terms, speaks somewhat too slowly / quickly, and/or the speaker's voice is completely monotone throughout the presentation.	The speaker maintains eye contact with the audience most of the time, occasionally returning to notes or looking at the screen; The speaker's voice is clear. The speaker pronounces words correctly. All audience members can hear the presentation. The speaker avoids using a monotone voice, and uses accurate scientific language.	The speaker maintains constant eye contact with audience, seldom returning to notes or looking at the screen. The speaker ensures eye contact is made with all areas of the audience, uses eye contact to engage audience, uses a clear voice and correct, precise pronunciation of all terms. The speaker uses specific emphasis and changing vocal tones to engage audience in a way that is reminiscent of normal conversation, and uses accurate and precise scientific language, while remaining approachable.
<b>Addressing questions</b>	<b>that the speaker can understand and answer questions about the topic or context of the science being presented</b>	The speaker lacked answers to obvious questions; and/or the speaker struggled to link answer to content of presentation.	The speaker made a strong effort to answer questions, but lacked depth of knowledge beyond what was already presented.	The questions were handled in a knowledgeable way. The speaker clearly demonstrated further depth of knowledge than just the information in presentation.	The questions were handled with confidence and in a knowledgeable way. The speaker demonstrated a depth of knowledge that exceeded expectations.
<b>Context</b>	<b>that the speaker highlights the context, significance and impact, and strengths and / or weaknesses of the work; acknowledges the surrounding body of work I the field</b>	The speaker did not highlight strengths and weaknesses of the method / science presented; did not put the work in context; and/or it is clear that the speaker only consulted one source of information. No or very few references provided with talk; no credit provided for duplicated material; and / or improper referencing style made it impossible for audience members to consult primary literature.	The speaker made an effort to highlight strengths / weaknesses of the method / science presented, but misunderstood or omitted important aspects; and/or few sources of information were consulted, offering a narrow perspective on the topic. Sporadic references throughout the talk; link with topic not always clear; credit given for some of duplicated material; Inconsistent referencing style.	The speaker clearly highlights strengths / weaknesses of the method / science presented. A variety of sources of information were consulted offering different perspectives on the presentation topic. The student provided adequate context. References are found throughout the presentation; credit is given for all duplicated material; proper and consistent referencing style applied throughout.	The speaker clearly highlights strengths and weaknesses of the method / science presented as well as comparing and contrasting the method / science presented with the current state of the art in the field. References found throughout the presentation and are clearly linked to the presentation; credit given for all duplicated material; student verbally references sources during presentation.