Course: LAWS 2230.03 Science and the Law
Term: Fall 2018
Class: Thursday @ 9:05-10:55AM, Room W411
Term: September 6 - December 4, 2018
Format: 2 hours per week, 3 credits
Instructor: Glenn Anderson
Email: Glenn.R.Anderson@novascotia.ca
Tel: 902-424-7979
Office Hours: Available to meet at the Weldon Building on request

Course Description
This is a seminar in which students discuss, conduct research and write papers on issues relating to science and law. Class discussions focus on the interaction of science and law, including a comparison of science and law, the history of science in the law, the use of science in the criminal and civil courts, science in legislation and lawyers’ use of science. The goal of the seminar is to enable students to become more sophisticated consumers of science and understand its relationship with law.

There is no required text. Reading materials will be provided by email.

Students are encouraged to write papers in their areas of interest. A science background is not required for enrolment in the seminar.

Evaluation
Class participation 10%
Paper topic (1-2 pages, due Tuesday, October 2 @ 4:00 p.m.) 10%
Class presentation (15 minutes on major paper, on November 22) 10%
Major Paper (25-40 pages, due Tuesday, December 4 @ 4:00 p.m.) 70%

No. Date Topic
1. Sep 6 Introduction
2. Sep 13 Early science in the law
3. Sep 20 Science and law

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1 Mr. Anderson will be communicating with students by email at all times, so they must activate and check their email. Students will be deemed to have received anything sent to them via their dal.ca account.
4. Sep 27  Science and regulation
5. Oct 4  [Individual meetings regarding papers]
6. Oct 11  Prof. James Drummond
7. Oct 18  Science in the criminal courts
8. Oct 25  Discerning the good from the bad
9. Nov 1  Lawyers and science
10. Nov 8  Dr. Grainne Neilson
11. Nov 15  No class (Nov 12-16 Fall Study Break)
12. Nov 22  Presentations
13. Nov 29  No class

Cancelled classes
I will inform you of this by email and let the reception (494-3495) know.

Student Requests for Accommodation
Requests for special accommodation for reasons such as illness, injury or family emergency will require an application to the Law School Studies Committee. Such requests (for example, for assignment extensions) must be made to Associate Dean, Academic Michael Deturbide or the Director of Student Services and Engagement Dana-Lyn Mackenzie as soon as possible, before a scheduled exam or a deadline for an assignment, and will generally require documentation. Retroactive accommodation will not be provided. Please note that individual professors cannot entertain accommodation requests.

Students may request accommodation for either classroom participation or the writing of tests and exams due to barriers related to disability, religious obligation, or any characteristic under the Nova Scotia Human Rights Act. Students who require such accommodation must make their request to the Advising and Access Services Center (AASC) at the outset of the regular academic year. Please visit www.dal.ca/access for more information and to obtain the Request for Accommodation – Form A. Students may also contact the Advising and Access Services Centre directly at (902) 494-2836.

Submission of Major Papers
Major papers and assignments must be submitted in hard copy. Students should hand papers in to the place stipulated by the instructor and ensure they are date and time stamped. Please read the law school policy on late penalties: https://www.dal.ca/faculty/law/current-students/jd-students/academic-regulations.html
Please note students may also be required to provide an identical electronic copy of their paper to the instructor by the due date. Papers may be submitted by the instructor to a text-matching software service to check for originality. Students wishing to choose an alternative method of checking the authenticity of their work must indicate to the instructor, by no later than the add/drop date of the course, which one of the following alternative methods they choose:

- submit copies of multiple drafts demonstrating development of their work
- submit copies of sources
- submit an annotated bibliography

A copy of the Major Paper Guidelines is attached. (It is available online: https://cdn.dal.ca/content/dam/dalhousie/pdf/law/Academic%20Information%20Syllabi%20Moots%20Regulations/major_paper_guidelines.pdf.)

The minimum page length is 25 pages; while there is no maximum length, my expectation is that most papers will between 25 and 40 pages long.

Plagiarism
All students must read the University policies on plagiarism and academic honesty http://academicintegrity.dal.ca/ and the Law School policy on plagiarism http://www.dal.ca/faculty/law/current-students/jd-students/academic-regulations.html. Any paper or assignment submitted by a student at the Schulich School of Law may be checked for originality to confirm that the student has not plagiarized from other sources. Plagiarism is considered a serious academic offence which may lead to loss of credit, suspension or expulsion from the law school, or even revocation of a degree. It is essential that there be correct attribution of authorities from which facts and opinions have been derived. Prior to submitting any paper or other assignment, students should read and familiarize themselves with the policies referred to above and should consult with the instructor if they have any questions. Ignorance of the policies on plagiarism will not excuse any violation of those policies.

Advising support and fair dealing guidelines
* General Academic Support – Advising Halifax: https://www.dal.ca/campus_life/academic-support/advising.html

Background
In 1999, Professor David Faigman, of the University of California Hastings College of the Law, saw it as inevitable that law schools would offer science and law courses.²

² David L. Faigman, Legal Alchemy: The Use and Misuse of Science in the Law (New York: W.H. Freeman, 1999) at xii.
Science should be a greater part of a law student’s education. No lawyer can be a critical-thinking generalist today if he or she cannot distinguish a mean from a mode or an independent variable from a dependent variable. As even a casual review of newspapers and television will support, science permeates every corner of the practice of law.

Without question, law schools will eventually respond to the over-whelming presence of science in the legal process.

A similar sentiment has been expressed in Canada.

In *Inquiry into Pediatric Forensic Pathology in Ontario*, Ontario Court of Appeal Justice Stephen Goudge recommends, “Law schools should be encouraged to offer courses in basic scientific literacy and the interaction of science and the law.”

Supreme Court Justices Binnie and Cromwell have expressed the need for scientific education as one way to assist non-scientists judging scientists.

In *Science in the Courtroom: The Mouse that Roared*, Binnie J. said that “scientific legal education has traditionally been a matter largely neglected in our law schools.”

Much greater effort on both the general and particularized education of judges and lawyers is overdue ... Of course, judges would be better off still if their education had started at a younger age, but scientific legal education has traditionally been a matter largely neglected in our law schools.

In a 2011 Macfadyen Lecture, Cromwell J. put it pointedly, “the legal profession and the judiciary need to improve their scientific literacy.”

The challenges associated with the use of science in the criminal and civil courts extend to many of areas of law. Science can be important in contract, property, constitutional, administrative, international, and, more recently topical, environmental law. Lawyers with basic scientific literacy and an understanding of the interaction of science and the law should be better equipped to identify and analyze issues involving science in their legal practices.

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MAJOR PAPER GUIDELINES

A “major paper” is a writing requirement worth not less than 60% of the final mark awarded in a class (i.e. between 60% and 100%).

Faculty Council designates which courses are to be taught as paper courses.

Guidelines for Major Paper Classes

a. Normally the paper will not be shorter than 25 pages.
b. At the beginning of the course, the professor should give the class an indication of the expectations regarding length. The professor might say “the minimum page length is 25 pages; while there is no maximum length, my expectation is that most papers will between 25 and 40 pages long.”
c. Normally a paper of a general descriptive nature will not meet the standards.
d. Normally the topic undertaken will be suitable for in-depth research with legal emphasis in a limited field of inquiry.
e. Normally the supervisor should approve the topic and the outline or draft of the paper.
f. Faculty members should make themselves available to meet with students to discuss the graded papers.
g. At each stage of the supervision of major papers, both the supervising faculty member and the student should pay explicit attention to each of the criteria relevant to the evaluation of the paper.
h. Copies of the major paper guidelines should be made available to students.

1. Objective of Major Paper Requirement

The major paper requirement is intended to assist in the improvement of the legal research and writing skills the student already has. It is to be, in effect, an extension of the first year legal writing program. The topics upon which the written assignments are undertaken should be of a type suitable for in-depth research in a limited field of inquiry and substantial Faculty input is essential.

2. Performance Expectation

The aim should be writing of publishable quality. It is to be expected that most students will not achieve such a high level of quality, just as most students will be unable to achieve an A standing in other classes. Papers should exhibit at least some level of legal analysis and not consist of a more recitation of decisions and facts. Supervision should be sufficient to make the writing requirement a real learning experience. This necessarily involves feedback to the student during the preparation of the paper and after its completion.
3. Curve Does Not Apply

The curve does not apply as a guideline in the marking of major papers, although a median grade range of 73-75 is enforced.

4. Criteria

The criteria of (a) Research; (b) Organization: Logic/Coherence; (c) Analysis-Insight-Synthesis; (d) Literary Style and (e) Originality are adopted explicitly as the ones relevant to evaluation of major papers. The definition of these criteria and the alphabetical grade equivalents and weights assigned to them as set out in the following table are adopted.

Please see Major Paper Guidelines Table in the calendar

a. Research involves the ability to find, select and use effectively all primary materials (case, statutes, regulations) and secondary sources (books or articles) relevant to the topic. In many classes, a comparative analysis of material from other jurisdictions (e.g. Britain and the United States) is appropriate or even essential. Students should not rely exclusively on secondary sources, but should read the original text of major cases and statutes referred to in the literature. Research materials should include, where appropriate, non-legal sources. Empirical research by students ought to be encouraged.

The table adopts the following descriptors for research (horizontal axis):

i) Outstanding - as defined above
ii) Thorough - no important area of research has been missed but there are a few loose ends or other sources that ought to have been explored.
iii) Not quite thorough - an important area of research has been missed or there are both loose ends and other sources to be explored.
iv) Serious but Unsuccessful canvass of sources contains the failings of (iii) only more so.
v) Mere attempt to consider sources - distinguishable from (iv) as being cursory rather than serious in considering main sources or there are clear errors in research, e.g. student fails to check for appeals of relevant decisions, and bases much of the analysis on a court of appeal case that has been reversed by the Supreme Court of Canada.
vii) No serious research effort - self explanatory

b. Organization: Logic/Coherence relates to the logical and coherent presentation of the subject matter, so that it is readily intelligible to the reader.

The introduction should assist the reader by providing both a clear statement of the problem that the student has chosen to analyze, the goal she/he seeks to achieve and a brief overview of the subjects she/he intends to discuss. The conclusion should play a similar role at the end
of the paper, except that it should also summarize the student's conclusions. Topics should appear in a logical sequence. Legal and factual material that provides the foundation for discussion of a particular issue should be set out before that issue is reached. The student should use headings to structure the paper and indicate when she/he is moving to a new topic or subtopic. There should also be transitional text to justify the shift to a new topic, explain its connection to issues previously discussed, and the like.

The table adopts the following descriptors for Organization (vertical axis):
- Excellent Organization
- Well organized: A few minor flaws, but generally good logical flow
- Moderate Disorganization throughout, but paper is generally intelligible
- Substantial Disorganization: paper hard to follow
- Incoherent: Disorganization is so great that paper is unintelligible

c. **Analysis-Insight-Synthesis:** These criteria relate to the evaluation of the student's ability to understand and utilize effectively the materials that she/he has found through research. They require an understanding of the subject matter that goes beyond the ability to merely recite the rationales of cases, the conclusions reached by other authorities or bare statistics.

Analysis relates to the student's detailed use of cases, statutes, and secondary sources within the paper to explore particular issues that she/he has identified. Good analysis will assist the reader to achieve a sophisticated understanding of the issues and relevant legal authorities without the need to read all the various sources that the student had identified through research. The student should provide a factual background adequate to permit the reader to understand the context in which legal problems arise. She/he should describe relevant legal material (cases/statutes) and important policy analysis (for example, Law Reform Commission materials) in sufficient detail to provide the reader with a clear view of any legal controversies that exist and reasoning that has been put forward to support the various positions. There are a wide variety of analytical weaknesses that may be displayed by students. Examples include missing a relevant issue or legal argument, identifying legal problems but not exploring available legal principles that may have a bearing on their solution, or stating the conclusions of cases significant to analysis of an issue without setting out the reasoning that the court used to justify its conclusions.

“Insight” involves an in-depth understanding of the fundamental issues. Good “Synthesis”, which usually demonstrates this understanding, reflects the ability of the student to integrate the diverse material that she/he has found into a conceptual framework that is clearly explained to the reader. Insight and synthesis would probably show up in a strong statement of thematic material at the outset, its use as an organizing device in the paper, and a serious attempt in the conclusion either to determine whether the initial hypothesis had been proven or to assess the conceptual apparatus for its explanatory power. Weak insight and synthesis may be demonstrated by a student's failure to integrate relevant authorities for some or all of the paper.

A better paper will draw inferences from the digested material as to the present state and future development of the law in the area researched, as well as formulating
recommendations for legal changes that might improve the situation and serve appropriate policy goals. Good analysis without much insight or synthesis may be average depending on the complexity or the novelty of the topic or research method. For instance, good analysis of an original topic (see Originality infra) may be as much as can be expected and should be rewarded highly. The same quality of analysis of a topic on which there is already a body of published critical writing that provides a framework or platform for the student's paper would have to show its own insight and synthesis to rate equally highly. A paper that sets out numerous cases or articles or otherwise merely describes the results of the student's research efforts, however extensive, without attempting to extract common principles or create an analytical basis is likely to be judged as poor.

The table adopts the following descriptors for analysis-insight-synthesis (vertically within each box in the table):

- Excellent
- Very Good
- Average
- Weak
- Poor

d. **Literary Style:** This criterion relates to the linguistic style in which the paper is written. Most Dalhousie law students do a competent job with grammar and spelling and many have excellent literary style. The stylistic problems present in papers are of two sorts. Legal writing should be formal but clear and straightforward. Some students tend to be too colloquial, using slang or contractions such as “won’t”. Other students try too hard to be formal, producing convoluted sentences, making excessive use of the passive voice, and the like.

Because most students are competent in terms of literary style, this criterion is used to make adjustments in the grades produced by the table set out above only in extreme cases. The professor may increase or reduce the alphabetic grade result produced by the table set out above by one grade level for exceptionally strong or exceptionally weak literary style as described below:

Descriptors for literary style:

**Excellent:** Literary style is significantly above the norm for Dalhousie Law students.
Raise table mark by one alphabetic grade level, e.g. B to B+

**Average:** Literary style is consistent with that demonstrated by the majority of Dalhousie law students, i.e. some stylistic weaknesses but basically competent
No change in table grade level as determined above

**Weak:** Student's literary style falls significantly below the norm for Dalhousie Law Students and demonstrates serious, persistent weaknesses in grammar, spelling, or style
Reduce table mark by one alphabetic grade level, e.g. B to C+
e. **Originality**: A highly prized, all-too-rare quality that cannot be easily defined, is used in the Table to raise the alphabetic grade that would have been assigned otherwise by a maximum of two grade levels. A paper may demonstrate good “analysis-synthesis” but still be lacking in originality. There are two different kinds of originality: topic originality and substantive originality.

The first sort of originality relates to the topic itself. This kind of originality exists when the student selects a topic where no research has been previously undertaken in Canada (i.e. there are no Canadian secondary sources that deal with the issue that the student has selected). There may or may not be articles or books that have been published on the topic in foreign jurisdictions (e.g. the United States or Britain), but even when such foreign sources do exist, a significant degree of creativity and extrapolation is required on the part of a student who undertakes to write on a topic where no previous Canadian research is available to help with all or part of the topic. This kind of originality may exist in major papers that display weaknesses in other areas. Indeed, some kinds of analytical or organizational problems may be attributable precisely to the fact that the student is working in an area where no guidance is available from previous research carried out by more experienced scholars. The professor may recognize this kind of originality relating to topic by increasing the alphabetic grade produced by the table above by one level (e.g. from a B to a B+).

The second kind of originality may appear in the way the research is approached or in the understanding that the writer has gained of the topic and is able to convey to the reader, or in the form of new and convincing insights that are unique to the student author. This kind of originality, which is the hallmark of a paper of “publishable quality”, is not mere novelty although in other contexts the word may have that meaning: the new position advocated by the student must be credible, as well as novel. A major paper may demonstrate this kind of originality, even though the topic has been previously considered by other researchers in Canada. Originality of this kind will normally be associated with good “insight- synthesis-analysis”. The professor may recognize this kind of substantive originality by increasing the alphabetic grade produced by the table above by either one or two levels depending on the extent of the originality demonstrated by the paper (e.g. from a B+ to an A, or from a B+ to an A+ grade).

The cumulative effect of increases for originality is restricted to a jump of two grade levels. In other words, a professor cannot award a student an originality increase of three grade levels by accumulating an award of one grade level for topic originality, and two grade levels for substantive originality.
<table>
<thead>
<tr>
<th>Research:</th>
<th>Organization/Logical Flow</th>
<th>Analysis Insight-Synthesis-</th>
<th>Outstanding</th>
<th>Thorough</th>
<th>Not quite thorough</th>
<th>Serious but Unsuccessful canvass of sources</th>
<th>Mere attempt to consider sources</th>
<th>No serious research effort</th>
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<td>Excellent</td>
<td>A</td>
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### Major Paper Guidelines Table

<table>
<thead>
<tr>
<th>Research:⇑</th>
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Raise table mark by one or two alphabetic grade levels e.g. B+ to A-, or A- or B+ to A.