






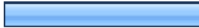



## 1. Which of the following standards or codes have you used?

|  |  | Response Percent | Response Count |
|--|--|------------------|----------------|
| ACI  |   | 31.1%            | 14             |
| ASME   |   | 22.2%            | 10             |
| <b>ASTM</b>  |  | <b>80.0%</b>     | <b>36</b>      |
| CGSB (Canadian General Standards Board) Standards                        |   | 4.4%             | 2              |
| CSA  |   | 46.7%            | 21             |
| NRC (National Building Code, National Plumbing Code, National Fire Code) |   | 42.2%            | 19             |
| IEEE Standards   |   | 20.0%            | 9              |
| ISO Standards  |   | 33.3%            | 15             |
| None   |   | 2.2%             | 1              |

Other (please specify) 10

**answered question 45**

**skipped question 0**

|    |   |                       |
|----|---|-----------------------|
| 1  | I did not know that we have access to ASME, online. I have used it before. I also have used DIN a lot (for design and manufacturing), which I did not find it in the library. | Aug 27, 2013 11:50 PM |
| 2  | ESDU (Engineering Sciences Data Unit)   | Aug 13, 2013 9:39 AM  |
| 3  | AASHTO NEHRP UBC  | Aug 12, 2013 2:45 PM  |
| 4  | NIST (Smart Grid)   | Aug 12, 2013 2:31 PM  |
| 5  | Euro Code American Association of State Highway and Transportation Officials (AASHTO)   | Aug 12, 2013 12:07 PM |
| 6  | AISC  | Aug 12, 2013 11:57 AM |
| 7  | Canadian Foundation Manual  | Aug 12, 2013 11:17 AM |
| 8  | AASHTO, Eurocode  | Aug 12, 2013 10:51 AM |
| 9  | Canadian foundation engineering manual  | Aug 12, 2013 10:15 AM |
| 10 | AREMA EURO Code OBC   | Aug 12, 2013 9:53 AM  |

**2. Please describe how you access these standards (e.g., online through library website; online through individual PDF purchase ; print copies in library; print copies in lab purchased with grant funding; access through corporate partners). Be as specific as possible.**

|                          |   | Response<br>Count     |
|--------------------------|---|-----------------------|
|                          |   | 40                    |
| <b>answered question</b> |   | <b>40</b>             |
| <b>skipped question</b>  |   | <b>5</b>              |
| 1                        | Online through library website or through individual PDF purchased  | Sep 4, 2013 12:00 PM  |
| 2                        | online through library website  | Aug 28, 2013 12:03 AM |
| 3                        | online pdf for ASTM which is free. I have not used the ones we should pay for that.   | Aug 27, 2013 11:50 PM |
| 4                        | online through library website  | Aug 27, 2013 3:16 PM  |
| 5                        | Typically online - its easy to search, available off campus, and fast. Though, this was hindered when the online CSA standards subscription was not renewed.  | Aug 27, 2013 1:50 PM  |
| 6                        | Print copy in library. It is no loan, so can only be accessed in the library.   | Aug 27, 2013 12:37 PM |
| 7                        | online through library website  | Aug 22, 2013 3:14 PM  |
| 8                        | Library website   | Aug 22, 2013 3:06 PM  |
| 9                        | I have tried but failed to access   | Aug 21, 2013 1:52 AM  |
| 10                       | My students have obtained these before. I believe that at least once they found them online. However, we have also accessed them through a collaborator at the Stiller Centre who has a subscription. | Aug 19, 2013 8:43 AM  |
| 11                       | search for them online  | Aug 13, 2013 11:47 PM |
| 12                       | Online pdf  | Aug 13, 2013 9:42 PM  |
| 13                       | Online mostly; Print copies in lab;   | Aug 13, 2013 3:48 PM  |
| 14                       | Online through the library is the preferred option for me and my students. If no online version is available, we will use one of the other mentioned options.   | Aug 13, 2013 2:13 PM  |
| 15                       | online through individual PDF purchase; access through corporate partners   | Aug 13, 2013 9:39 AM  |
| 16                       | We need access for Research.  | Aug 12, 2013 4:51 PM  |
| 17                       | online through library website; access through corporate partners   | Aug 12, 2013 2:45 PM  |
| 18                       | Access through library website. Available in Electronic Shop (Electric Code)<br>Access through IEEE (Draft versions)  | Aug 12, 2013 2:31 PM  |
| 19                       | online resourses  | Aug 12, 2013 1:01 PM  |
| 20                       | online through library website  | Aug 12, 2013 12:25 PM |

|    |  |                       |
|----|--|-----------------------|
| 21 | When access is available online through the library, normally this is where I access the info first. If I need it immediately and it is not available online, I get a paper copy from the library and photocopy important sections. When I need info over the long term, I try to get a .pdf file or scan of the docs, cost are too high to pay online (I only make \$12k a year of which 100% goes to daycare fees), as such I usually find/obtain illegal copies online or through contacts, these usually are inferior versions that are not searchable, and although more convenient than scanned hard copies I take from the library, I find it a moral dilemma and try to avoid if possible although spending hours of time scanning standards has been cutting into my research time. | Aug 12, 2013 12:07 PM |
| 22 | Library Online, Online Purchase, Print Copies  | Aug 12, 2013 11:58 AM |
| 23 | Online through library website, print copies in library  | Aug 12, 2013 11:57 AM |
| 24 | online through individual PDF purchase   | Aug 12, 2013 11:30 AM |
| 25 | personal print copies  | Aug 12, 2013 11:17 AM |
| 26 | On line through library  | Aug 12, 2013 11:00 AM |
| 27 | some online and some from library  | Aug 12, 2013 10:51 AM |
| 28 | Online through the library site, if not available I use print copies from the library.   | Aug 12, 2013 10:21 AM |
| 29 | ASTM: online through library website ACI, CSA and NRC: print copies in library   | Aug 12, 2013 10:21 AM |
| 30 | Online - hardcopy available in library   | Aug 12, 2013 10:15 AM |
| 31 | online through library website; print copies in library  | Aug 12, 2013 9:58 AM  |
| 32 | Online through the library website and print copies in library   | Aug 12, 2013 9:53 AM  |
| 33 | Online library website   | Aug 12, 2013 9:19 AM  |
| 34 | Most of the time online but other means are possible.  | Aug 11, 2013 9:53 AM  |
| 35 | online directly or through library   | Aug 9, 2013 11:11 PM  |
| 36 | ASTM database accessed through "Program Guides" on library website. PDFs downloaded off of linked ASTM website, and printed if necessary.  | Aug 9, 2013 4:44 PM   |
| 37 | print copies in lab purchased with grant funding online  | Aug 9, 2013 2:03 PM   |
| 38 | online through library website   | Aug 9, 2013 1:22 PM   |
| 39 | IEEE through uwo lib portal, external websites, and borrowed copies from colleagues.   | Aug 9, 2013 12:45 PM  |
| 40 | Typically on-line either through the library website or some other web site. We rarely purchase.   | Aug 9, 2013 9:59 AM   |

### 3. Describe how standards support you in your teaching, if applicable. Which standards are the most important for your teaching?

|                   |   |                       | Response<br>Count |
|-------------------|---|-----------------------|-------------------|
|                   |   |                       | 28                |
| answered question |   |                       | 28                |
| skipped question  |   |                       | 17                |
| 1                 | CSA Standards and NRC codes I am teaching design course so students need to refer to these standards and codes to learn the design process.   | Sep 4, 2013 12:00 PM  |                   |
| 2                 | n/a   | Aug 28, 2013 12:03 AM |                   |
| 3                 | I am phd student.   | Aug 27, 2013 11:50 PM |                   |
| 4                 | Standards are not very important for my teaching.   | Aug 27, 2013 1:50 PM  |                   |
| 5                 | I teach a course in pressure vessel design using the ASME Boiler and Pressure Vessel Code. It is difficult to teach this subject without easy access to the code for instructor and students. | Aug 27, 2013 12:37 PM |                   |
| 6                 | Provide standard analysis procedures  | Aug 22, 2013 3:06 PM  |                   |
| 7                 | For my research I need to go through ASTM and ISO standards   | Aug 21, 2013 1:52 AM  |                   |
| 8                 | Not really in my teaching so far, although they would have potential use in the development of laboratory courses.  | Aug 19, 2013 8:43 AM  |                   |
| 9                 | As literature review and what is not covered yet  | Aug 13, 2013 11:47 PM |                   |
| 10                | N/A   | Aug 13, 2013 3:48 PM  |                   |
| 11                | For the courses that I am teaching, ACI and CSA standards are the most important. Students use these standards to find the design equations.  | Aug 13, 2013 2:13 PM  |                   |
| 12                | I do not need them in teaching.   | Aug 12, 2013 2:45 PM  |                   |
| 13                | not applicable  | Aug 12, 2013 2:31 PM  |                   |
| 14                | Since we are normally teaching Canadian Standards, As a TA I at times refer to CSA and NRC standards to answer questions from students as well as prepare solutions for assignment questions. | Aug 12, 2013 12:07 PM |                   |
| 15                | All laboratory assignments follow ASTM standards. Written assignments often reference NRC, ASTM.  | Aug 12, 2013 11:58 AM |                   |
| 16                | Inorder to teach design courses in Civil engineering, standard is must.   | Aug 12, 2013 11:57 AM |                   |
| 17                | ACI   | Aug 12, 2013 11:30 AM |                   |
| 18                | The course I teach involve significant laboratory and practical components which are taught according to the available codes and standards. The students need the standards.                  | Aug 12, 2013 11:17 AM |                   |

|    |   |                       |
|----|---|-----------------------|
| 19 | all the above are very important for teaching upper years in civil engineering  | Aug 12, 2013 10:51 AM |
| 20 | ASTM...methods of testing construction materials  | Aug 12, 2013 10:21 AM |
| 21 | The most important standards for my teaching are CSA S6 (Highway bridge design standard) and National Building Code of Canada. CSA S6 and NBCC are crucial for my two undergraduate courses, the capstone design project CEE4441  | Aug 12, 2013 9:58 AM  |
|    | and Dynamics of Structures CEE4490. The students in these courses rely heavily on the two standards to carry out the capstone design projects and understand the current design provisions for wind and earthquake loads in the Canadian building design codes. It will be a major setback in the two courses if the students do not have online access to CSA S6 and NBCC. |                       |
| 22 | Standards for teaching design requirements, specifically the NRC, OBC, and AREMA.   | Aug 12, 2013 9:53 AM  |
| 23 | Important in design related courses and also applied courses.   | Aug 11, 2013 9:53 AM  |
| 24 | NA  | Aug 9, 2013 11:11 PM  |
| 25 | N/A   | Aug 9, 2013 4:44 PM   |
| 26 | N/A   | Aug 9, 2013 2:03 PM   |
| 27 | ISO and IEEE standards for communication protocols used as reference for programming assignments and projects   | Aug 9, 2013 12:45 PM  |
| 28 | Some of the IEEE guidelines are discussed in our class.   | Aug 9, 2013 9:59 AM   |

**4. Describe how standards support you in your research, if applicable. Which standards are the most important for your research?**

|                          |   | Response<br>Count     |
|--------------------------|---|-----------------------|
|                          |   | 37                    |
| <b>answered question</b> |   | <b>37</b>             |
| <b>skipped question</b>  |   | <b>8</b>              |
| 1                        | My research evaluates current standards and suggest changes, where possible.  | Sep 4, 2013 12:00 PM  |
| 2                        | ASM ASTM very useful  | Aug 28, 2013 12:03 AM |
| 3                        | They are used to carry different experiments towards my research. ASTM ASME Machinery handbook  | Aug 27, 2013 11:50 PM |
| 4                        | Testing methods ASTM standards  | Aug 27, 2013 3:16 PM  |
| 5                        | Standards form the backbone of my research. They are the first place I look for information, and a constant reference.  | Aug 27, 2013 1:50 PM  |
| 6                        | Some test are required to be done according to ASTM standard  | Aug 22, 2013 3:14 PM  |
| 7                        | Provide standard analysis procedures  | Aug 22, 2013 3:06 PM  |
| 8                        | ASTM, ISO   | Aug 21, 2013 1:52 AM  |
| 9                        | We have used them for publishable research as well as for experiments to support patent applications.   | Aug 19, 2013 8:43 AM  |
| 10                       | ACI standards   | Aug 13, 2013 11:47 PM |
| 11                       | ASTM for laboratory testing;  | Aug 13, 2013 3:48 PM  |
| 12                       | Part of my research focuses on proposing changes in the design standards. Having access to previous and current standards is critical for my research.  | Aug 13, 2013 2:13 PM  |
| 13                       | Code itself is often the most important benchmark to compare my current researching outcomes as for civil engineers the code is the only document, in most cases, based on which design or judgement should be made correctly. Therefore, one of my research purposes is to modify or update the code contents. | Aug 13, 2013 9:39 AM  |
| 14                       | Allows students to follow published procedures/methods.   | Aug 12, 2013 4:51 PM  |
| 15                       | In my discipline some of them like ASTM, CSA are the most important ones.   | Aug 12, 2013 2:45 PM  |
| 16                       | experimental equipment must be designed to safety standards and inspected (Electrical Safety Authority) New standards are being set in areas like the Smart Grid by NIST  | Aug 12, 2013 2:31 PM  |
| 17                       | IEEE and ISO  | Aug 12, 2013 12:25 PM |

|    |   |                       |
|----|---|-----------------------|
| 18 | In my research, the most important standards are the ones found under CSA. Specifically the "Canadian Highway Bridge Design Code" and "Guidelines for the development of limit states design standards". I need to refer to these standards since my research involves updating the Canadian Military Bridge Evaluation and Design standards to methodologies employed by the CHBDC which employs limit states design. A broader aspect of my research it needed updates to the NATO military load classification system, this is how bridge and vehicle ratings are standardized between NATO countries, as such I often need to refer and compare bridge design and evaluation methodologies other member nations | Aug 12, 2013 12:07 PM |
|    | use, which covered under AASHTO and EuroCode. Having access to existing bridge design standards is vital to my research since my research is directly related to the creation of standards for use by the military. For individuals, such as myself, whose research is more grounded in real-life application as opposed expanding and testing theoretical fundamentals, it is essential that all outcomes are referred to existing standards so that research is compatible.   |                       |
| 19 | All laboratory tests I conduct need to be carried out according to ASTM standards.  | Aug 12, 2013 11:58 AM |
| 20 | CSA, ACI, AISC  | Aug 12, 2013 11:57 AM |
| 21 | ACI   | Aug 12, 2013 11:30 AM |
| 22 | My research includes laboratory testing and are connected to practice and industry. I need standards and codes in order to conduct research according to these codes.   | Aug 12, 2013 11:17 AM |
| 23 | I need all of indicated standards for my research   | Aug 12, 2013 11:00 AM |
| 24 | all of the above  | Aug 12, 2013 10:51 AM |
| 25 | In research, we use standards to test our materials. This is an integral part of getting publications.  | Aug 12, 2013 10:21 AM |
| 26 | ASTM, ACI, CSA and NRC  | Aug 12, 2013 10:21 AM |
| 27 | All the tests I performed/will perform during my research period are carried out according to these standards. also interpretation of the results conforms to these standards   | Aug 12, 2013 10:15 AM |
| 28 | The most important standards for my research are ASME B31.4, B31.8 (liquid and gas pipeline standards), CSA Z662 - oil and gas pipeline standards and various ASTM standards on fracture toughness testing. These standards are crucial for my research on energy pipelines to be relevant to the industry practice and for my research group to carry out standardized fracture mechanics testing in my CFI-funded lab.  | Aug 12, 2013 9:58 AM  |
| 29 | Testing standards (ASTM) define how to test my samples. Design standards help identify crucial design information, and how the design process is conducted.   | Aug 12, 2013 9:53 AM  |
| 30 | ASTM standards are particularly important to run test samples for comparison and validity purposes in research.   | Aug 12, 2013 9:19 AM  |
| 34 | We use the standards for materials (composition, heat treatments, etc.), mostly metals, and for corrosion and other testing.  | Aug 9, 2013 2:03 PM   |
| 35 | for reference collection  | Aug 9, 2013 1:22 PM   |
| 36 | IEEE Standards for developing software necessary for research and experimentation. CSA standards for similar develop of hardware for research - power standards.  | Aug 9, 2013 12:45 PM  |
| 37 | IEEE  | Aug 9, 2013 9:59 AM   |

**5. Are there standards you need to use but you do not have access to? If yes, please specify.**

|                          |  | Response<br>Count     |
|--------------------------|--|-----------------------|
|                          |  | 27                    |
| <b>answered question</b> |  | <b>27</b>             |
| <b>skipped question</b>  |  | <b>18</b>             |
| 1                        | CSA standards  | Sep 4, 2013 12:00 PM  |
| 2                        | DIN and ASME(section VII), I dont know if library has them. These standars are very useful if you are working with industry.                     | Aug 27, 2013 11:50 PM |
| 3                        | standards are required in many design projects. It is hard to know in advance which standards are needed.  | Aug 27, 2013 12:37 PM |
| 4                        | I don't have access  | Aug 21, 2013 1:52 AM  |
| 5                        | I believe there were tests that we did not have access to through UWO, but which we obtained through our collaborator as discussed above.        | Aug 19, 2013 8:43 AM  |
| 6                        | Yes  | Aug 13, 2013 11:47 PM |
| 7                        | I have come across some guidelines (not sure if these count as standards) that were not available.   | Aug 13, 2013 3:48 PM  |
| 8                        | NO   | Aug 13, 2013 2:13 PM  |
| 9                        | ESDU   | Aug 13, 2013 9:39 AM  |
| 10                       | yes, CSA, ASTM and AASHTO.   | Aug 12, 2013 2:45 PM  |
| 11                       | some IEEE  | Aug 12, 2013 2:31 PM  |
| 12                       | No   | Aug 12, 2013 12:25 PM |
| 13                       | AASHTO - access to some but not all content of interest (access desired not neccesarly required at this time) EuroCode - No Access               | Aug 12, 2013 12:07 PM |
| 14                       | Eurocodes  | Aug 12, 2013 11:58 AM |
| 15                       | yes  | Aug 12, 2013 11:57 AM |
| 16                       | yes  | Aug 12, 2013 11:30 AM |
| 17                       | yes. the Canadian Foundation Manual  | Aug 12, 2013 11:17 AM |
| 18                       | I need DIN and British standards for my research and lhad a hart time finding them. I have purchased them ultimately through our research grant. | Aug 12, 2013 11:00 AM |
| 19                       | AASHTOO, Eurocode  | Aug 12, 2013 10:51 AM |
| 20                       | ASTM standards for polymer materials, bacteria surface and solution testing.   | Aug 12, 2013 10:21 AM |






|    |   |                       |
|----|---|-----------------------|
| 21 | yes, European standards   | Aug 12, 2013 10:21 AM |
| 22 | Currently we don't have online access to the CSA, NBCC or ASTM standards. | Aug 12, 2013 9:58 AM  |
| 23 | ISO not available from the online western libraries link.                 | Aug 12, 2013 9:19 AM  |
| 24 | NO  | Aug 11, 2013 9:53 AM  |
| 25 | It can get expensive  | Aug 9, 2013 11:11 PM  |
| 26 | I have never had an issue with accessing relevant standards.              | Aug 9, 2013 4:44 PM   |
| 27 | unknown   | Aug 9, 2013 12:45 PM  |







**6. Is there any other information you would like to share about how you use standards and codes for your teaching and research?**

|                          |   |                       | Response<br>Count |
|--------------------------|---|-----------------------|-------------------|
|                          |   |                       | 12                |
| <b>answered question</b> |   |                       | <b>12</b>         |
| <b>skipped question</b>  |   |                       | <b>33</b>         |
| 1                        | Essential for students in Civil and Environmental Engineering   | Sep 4, 2013 12:00 PM  |                   |
| 2                        | To lose any more online access to standards, especially the ASTM standards, would be a mistake for Western.   | Aug 27, 2013 1:50 PM  |                   |
| 3                        | Knowledge of standards and codes is a CEAB requirement. However, standards and codes are difficult to access compared to other resources.   | Aug 27, 2013 12:37 PM |                   |
| 4                        | no  | Aug 13, 2013 3:48 PM  |                   |
| 5                        | No  | Aug 13, 2013 2:13 PM  |                   |
| 6                        | 1) I find it disturbing that in order to continuous gain access to standards that graduate students sometimes are making the decision to obtain illegal copies (paper or electronic) in conduct of their research. In talking with some of these students what I find most disturbing is that this isn't even a dilemma for many of them. I find it sad that some students are in a situation where the need to obtain illegal copies of standards to effectively pursue their research (this shouldn't be a choice they need to make). Further to this, for those that don't see a moral dilemma, how will this attitude with regard to legality (where breaking it doesn't even prompt even a second of contemplation) play out when these individuals become practicing professionals. 2) To be noted as a Graduate Student. During Pre-Stressed Concrete, I heavily relied on electronic access to CSA standards related to concrete, to complete assignments. Most other persons in this class also relied on the same standards to complete assignments. Given there is only one paper copy of the required document in the library I don't see how assignments could be completed without electronic access to CSA standards given there was 20 students enrolled int he class. Without access to CSA standards online, either many students would have to purchase a copy (\$210.00 for electronic or hard copy) or spend hours photocopying or scanning nearly 600 pages of this text (would you really want graduate students dedicating hours of their time to scanning docs?) | Aug 12, 2013 12:07 PM |                   |
| 7                        | It is a great idea that we have access to most using standrads through lib website and have hardcopy of those we have not access to.  | Aug 12, 2013 11:00 AM |                   |
| 8                        | CSA and ASTM are now available online but ACI, AASHTO and Eurocode are not  | Aug 12, 2013 10:51 AM |                   |
| 9                        | The more the better   | Aug 12, 2013 10:21 AM |                   |
| 10                       | no  | Aug 12, 2013 10:21 AM |                   |
| 11                       | No  | Aug 11, 2013 9:53 AM  |                   |
| 12                       | Keep up the good work.  | Aug 9, 2013 4:44 PM   |                   |

## 7. What is your status at Western?

|                         |   | Response Percent         | Response Count |
|-------------------------|---|--------------------------|----------------|
| Faculty                 |  | 24.4%                    | 11             |
| <b>Graduate student</b> |  | <b>68.9%</b>             | <b>31</b>      |
| Undergraduate student   |   | 0.0%                     | 0              |
| Staff                   |  | 6.7%                     | 3              |
|                         | Other (please specify)  |                          | 0              |
|                         |   | <b>answered question</b> | <b>45</b>      |
|                         |   | <b>skipped question</b>  | <b>0</b>       |

## 8. What is your primary departmental affiliation at Western?

|  |   | Response Percent         | Response Count |
|--|---|--------------------------|----------------|
| Chemical and Biochemical Engineering       |   | 27.3%                    | 12             |
| Chemistry                                  |  | 11.4%                    | 5              |
| <b>Civil and Environmental Engineering</b> |  | <b>43.2%</b>             | <b>19</b>      |
| Computer Science                           |  | 2.3%                     | 1              |
| Earth Sciences                             |   | 0.0%                     | 0              |
| Electrical and Computer Engineering        |  | 4.5%                     | 2              |
| Mechanical and Materials Engineering       |  | 11.4%                    | 5              |
| Medical Biophysics                         |   | 0.0%                     | 0              |
| Physics and Astronomy                      |   | 0.0%                     | 0              |
|  | Other (please specify)  |                          | 0              |
|  |   | <b>answered question</b> | <b>44</b>      |
|  |   | <b>skipped question</b>  | <b>1</b>       |

**9. We may want to follow up with you regarding your responses to some of these questions - if you are open to this, please provide us with your email address.**

|                   | Response Count |
|-------------------|----------------|
|                   | 26             |
| answered question | 26             |
| skipped question  | 19             |