

General Framework for a Bachelor of Science (B.Sc.) at Kwantlen Polytechnic University

This version of the B.Sc. framework passed the Science Curriculum Committee, the Science and Horticulture Faculty Council, and SSCC on 1 June 2010, 14 June 2010, and 5 January 2011, respectively.

The B.Sc. degree program is designed to provide students with a solid foundation in basic science, as well as the opportunity to specialize in their area of interest at the upper levels. It includes a component of liberal education to ensure that students are able to access a variety of future educational and employment opportunities, to participate actively in collegial discussion and to contribute constructively to the body of scientific knowledge.

The program is also designed to provide students with the following:

- 1) An integrated educational experience that develops critical awareness of issues of cultural and global well being particularly as they relate to the scientific knowledge base.
- 2) An integrated educational experience that develops problem solving and analytic skills to be used in the workplace or in further study after graduation, and also to be used in making decisions as an informed citizen.
- 3) An integrated educational experience that enhances skills in written and spoken English, and enables effective communication and constructive contributions to the scientific knowledge base.

Framework

All students seeking to graduate with a Bachelor of Science (B.Sc.) degree from Kwantlen Polytechnic University must complete all of the following requirements:

- A minimum of 120 credits and a minimum of 40 courses total at the post-secondary level.¹ (Note that in this document the word “course” refers to a course of at least 3 credits.) At least 45 of these credits (15 courses) must be at the 3000 or 4000 level.
- A minimum **6** credits writing requirement, including at least 3 credits from ENGL 1100 or any other designated by Senate as meeting writing-intensive guidelines.
- A minimum **3** courses (**9** credits) in MATH², and a minimum of **4** credits in each of BIOL, CHEM, and PHYS.^{3,4}
- **3** credits of statistics⁵ (which could be included in the 3 MATH courses).
- A minimum **66** science⁶ credits (including at least **5** courses with a lab component⁴), with at least **30** credits of the 66 science credits at the 3000 and 4000 level. This must include at least 9 credits (minimum 3 courses) at the 4000 level.
- A minimum **18** credits breadth requirement⁷, including at least 1 course at the upper level.
- A minimum of a passing grade (D or better) in all courses counting towards the B.Sc., with a cumulative GPA of 2.0 or higher.
- To meet residency expectations, at least **50%** of all courses for the B.Sc.,⁸ and at least **66%** of upper level courses for the B.Sc., will be completed at Kwantlen Polytechnic University.

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APPENDIX

- ¹ Courses numbered 1099 or lower (such as CHEQ 1094 or MATQ 1093) **cannot be counted** towards a Bachelor of Science degree.
- ² At least 3 credits in MATH must be from MATH 1120, MATH 1130, or MATH 1140 (with a C+ or better).
- ³ ASTR 1100, ASTR 1105, ASTR 3110, ASTR 3111, ENVI 3112, ENVI 2405, MATH 1115, MATH 1116, MATH 1117, MATH 1190, and PHYS 1112 **cannot be counted** as science credits towards a Bachelor of Science, but may be used as elective credits. CHEM 1101 **cannot** be used either as science or elective credits. BIOL 1112, CHEM 1105, MATH 1112, and PHYS 1100 **cannot be counted** as science or elective credits unless included in the degree requirements.
- ⁴ As Mathematics is not a laboratory-based science, students pursuing a major in Math are only required to take **3** courses with a lab component from at least **2** disciplines of biology, chemistry, and physics.
- ⁵ Specific mathematics requirements are generally prescribed in the course content for any Bachelor of Science degree. Calculus 1 may be one of MATH 1120, MATH 1130, or MATH 1140 (with a C+ or better) and Calculus 2 may be one of MATH 1220, MATH 1230, or MATH 1240 (with a B- or better). Courses with considerable content overlap may only be counted once: (MATH 1120 or 1130 or 1140), (MATH 1220 or 1230), (MATH 2335 or 2341), for example. The statistics courses must be coded "MATH" (i.e. MATH 2315 or 2335), unless they are offered at the 3000 or 4000 level, in which case a minimum of **6** MATH credits would be required. Students entering the degree who have already successfully completed an equivalent level of statistics to the one(s) prescribed in the degree may apply for course substitution.
- ⁶ Specific biology, chemistry, mathematics and physics requirements are generally prescribed for any Bachelor of Science degree in these areas. Courses outside these fields may also qualify as science courses provided they are deemed to contain or demand sufficient quantitative reasoning (*numerical, geometric, statistical, probabilistic*), formal reasoning (*mathematical or logically deductive*) or scientific reasoning (*involving the scientific method in general, and/or the methodology or content of a specific scientific discipline*) as a base principle in their primary subject matter. These are usually prescribed in the specific degree requirements. Courses with considerable content overlap may only be counted once: For example, BIOL 1112 or BIOL 1210, ENVI 1106 or CHEM 1110, ENVI 1206 or CHEM 1154 or CHEM 1210, CHEM 3310 or CHEM 2311, PHYS 1101 or PHYS 1120, PHYS 1102 or PHYS 1220.
- ⁷ At least **12** breadth credits **must come** from fields or courses not regarded as science courses as per the above defining criteria (see note #6) for science or mathematics. LCOM 4100 may be used as a breadth requirement. Up to **6** credits of breadth **may come** from fields of science not prescribed in the specific requirements for that Bachelor of Science degree - these may include ASTR 1100, ASTR 1105, ASTR 3110, and ASTR 3111 from Note 3 above. PHYS 1112 may also count towards the breadth requirement, but cannot count towards the physics requirement for the degree.
- ⁸ On an individual basis, students may apply to the appropriate program chair for an exemption to these expectations; however, Kwantlen policy B.14, Credit for Prior Learning, requires that no more than 75% of credits for graduation can be obtained through transfer credit and/or prior learning assessment.