Collection Policy: Chemistry

1. Introduction

The Library supports the instructional and research needs of faculty and students working within the Department of Chemistry. Instruction in Chemistry has been part of the curriculum since the inception of the Lakehead Technical Institute. Initially supporting first year academic coursework for university bound students and curriculum for technical diploma programs, advanced and specialized academic programs were developed for Chemistry in the 1960’s. In 1965 the Department started a 3 year general Bachelor of Science Degree Program in Chemistry. An Honours Bachelor of Science Degree in Chemistry was added in 1966 and a Masters level Chemistry program started in 1969. A Doctor of Philosophy in Chemistry and Materials Science has recently been added. Currently, the department supports an option for a minor in northern studies and has contributed to a Bachelor of Science program geared for health professionals since 2003. The Chemistry Department continues to grow by supporting new interdisciplinary undergraduate programs in Bioinformatics and Applied Biomolecular Science as well as a graduate PhD program in Biotechnology.

The Department of Chemistry currently offers the following programs:

- Honours Bachelor of Science degree in Chemistry
- Bachelor of Science degree in Chemistry
- Honours Bachelor of Science in Biology and Chemistry
- Bachelor of Science degree in Biology and Chemistry
- Honours Bachelor of Science in Chemistry offered concurrently with a Bachelor of Education
- Honours Bachelor of Science in Biology and Chemistry offered concurrently with a Bachelor of Education
- Master of Science degree in Chemistry
- Doctor of Philosophy in Chemistry and Materials Science

The Chancellor Paterson Library is the main location for the print collection. Print monograph and print journal collections are enhanced by a substantial and growing collection of electronic books and electronic journals.

2. History of the Collection
Lakehead University’s Chemistry curriculum includes introductory courses in modern chemistry and foundations of chemistry as well as courses in analytical and physical chemistry, inorganic and organic chemistry, biochemistry, polymer chemistry, bioinformatics, reaction mechanisms, electro-analytical chemistry and advanced research methodology. Undergraduate level chemistry courses are also taught to support programs for Forestry, Geology, Northern Studies or Environmental Studies. Graduate courses include advanced studies in analytical, inorganic, and organic chemistry, as well as advanced research methodology, and special topics.

The longevity of Lakehead’s Chemistry program has yielded a well-established collection which includes a good foundation of materials pertaining to the theoretical and practical applications of Chemistry. The collection has grown in response to curricular changes and scientific advancement.

The department selects a wide variety of materials across the discipline. Recent acquisitions reflect an interest in nanotechnology, electrochemistry, biotechnology, and spectroscopy.

3. Languages

Acquisitions are primarily in the English language.

4. Chronological Guidelines

Emphasis is on the acquisition of current material.

5. Geographical Guidelines

There are no geographical restrictions.

6. Types of Material

The Library actively collects monographs, journals, government documents and reference materials. Conference proceedings, dissertations and theses, annual reports and other serial publications are acquired selectively.

The predominant format for monographs is print although the Library is progressively building the electronic book collection. The predominant format for journals and government documents is electronic.

7. Subject Areas/Levels

(4 levels: basic, initial study, advanced study, research)
The subject organization below follows the Library of Congress Classification Outline. Core materials for Chemistry fall into class QD. The chart below reflects library monograph holdings in both print and electronic format.

<table>
<thead>
<tr>
<th>#</th>
<th>SUBJECT</th>
<th>LC CLASS</th>
<th>CURRENT LEVEL</th>
<th>TARGET LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>General</strong> history, experimentation, laboratories</td>
<td>QD 1-65</td>
<td>Initial</td>
<td>Initial</td>
</tr>
<tr>
<td>2</td>
<td><strong>Analytical Chemistry</strong> Methods, chromatography, electrochemical, gas and technical analysis</td>
<td>QD 71-142</td>
<td>Initial</td>
<td>Advanced</td>
</tr>
<tr>
<td>3</td>
<td><strong>Electroanalytical Chemistry</strong></td>
<td>QD 115-116.999</td>
<td>Basic</td>
<td>Advanced</td>
</tr>
<tr>
<td>4</td>
<td><strong>Inorganic Chemistry</strong> metals and non metals, special elements, salts, inorganic polymers, cyclic compounds, reaction mechanisms</td>
<td>QD 146-197</td>
<td>Initial</td>
<td>Advanced</td>
</tr>
<tr>
<td>5</td>
<td><strong>Polymers</strong></td>
<td>QD 196-196.999 QD 380-388 TP 1080-1185</td>
<td>Initial</td>
<td>Initial</td>
</tr>
<tr>
<td>6</td>
<td><strong>Organic Chemistry</strong> special methods of analysis (spectrum, electrochemical, chromatography, etc) electrochemistry, special operations (alkylation, hydrogenation, etc), aliphatic compounds, aromatic compounds, antibiotics, polymers, heterocyclic and macrocyclic chemistry, organometallic chemistry. reaction mechanisms</td>
<td>QD241-411</td>
<td>Advanced</td>
<td>Advanced</td>
</tr>
<tr>
<td>7</td>
<td><strong>Biochemistry</strong> alkaloids, steroids, proteins</td>
<td>QD412.5-441.999 Supplemented by QH345-346</td>
<td>Basic</td>
<td>Advanced</td>
</tr>
<tr>
<td>#</td>
<td>SUBJECT</td>
<td>LC CLASS</td>
<td>CURRENT LEVEL</td>
<td>TARGET LEVEL</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
<tr>
<td>8</td>
<td>Physical and theoretical Chemistry</td>
<td>QD 450-801</td>
<td>Advanced</td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>quantum chemistry, atomic and molecular weights, chemical elements and compounds, physical properties, laws of chemical reactions, chemiluminescence, surface chemistry, thermochemistry, electrochemistry, plasma chemistry, magnetochemistry, radiochemistry reaction mechanisms</td>
<td>(plant), QK 861-899 (botanical) and QP 501-981 animal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Radiation Chemistry</td>
<td>QD 625-655 Supplemented by QC 474-496.9 Radiation physics</td>
<td>Basic</td>
<td>Initial</td>
</tr>
<tr>
<td>10</td>
<td>Photochemistry</td>
<td>QD 701-731</td>
<td>Basic</td>
<td>Initial</td>
</tr>
<tr>
<td>11</td>
<td>Crystallography</td>
<td>QD 901-999</td>
<td>Initial</td>
<td>Initial</td>
</tr>
<tr>
<td>12</td>
<td>Chemical engineering</td>
<td>TP155-156</td>
<td>Advanced</td>
<td>Advanced</td>
</tr>
<tr>
<td>13</td>
<td>Chemicals manufacture, use etc (biochemical eng)</td>
<td>TP200-248</td>
<td>Initial</td>
<td>Initial</td>
</tr>
<tr>
<td>14</td>
<td>Spectroscopy (physics)</td>
<td>QC450-467</td>
<td>Initial</td>
<td>Advanced</td>
</tr>
<tr>
<td>15</td>
<td>Biotechnology</td>
<td>TP248.13-248.65</td>
<td>Initial</td>
<td>Advanced</td>
</tr>
</tbody>
</table>
8. Interdisciplinary Activities

The chemistry department works collaboratively to support programs with various departments. A joint B.Sc./B.Ed. program is provided with the Faculty of Education, and a joint B.Sc. in chemistry and biology is offered with the Department of Biology. Chemistry supports interdisciplinary undergraduate programs in bioinformatics and applied biomolecular science as well as a PhD program in biotechnology. In addition, relevant chemistry curriculum has been developed for students in disciplines such as forestry, geology, environmental studies and various health sciences.

9. Strengths/Weaknesses

The Chemistry collection is solid with particularly good coverage in fields of physical and theoretical chemistry as well as organic chemistry. Coverage is available on subjects like laws, compounds, electrochemistry, synthesis, polymers, and organometallic chemistry. The collection is supplemented by areas where there is significant interdisciplinary crossover; Chemical Engineering and select aspects of Physics like radiation physics and spectroscopy, for example.

The department is judiciously selecting materials across the discipline. Relatively current content is available in nearly all subject areas. Recent acquisitions have reflected an interest in nanotechnology, electrochemistry, biotechnology, and spectroscopy. The collection could benefit from additional materials on the subjects of reaction mechanisms, photochemistry, nanotechnology, electroanalytical chemistry, biochemistry and biotechnology; the latter two to support advanced interdisciplinary undergraduate programs in Applied Biomolecular Science as well as a PhD program in Biotechnology. Research level materials should be selected in Physical and Theoretical chemistry to support the PhD Program in Chemistry and Material Science and additional purchasing in radiation chemistry materials should be considered in light of the technology available through the Thunder Bay Research Institute. Specific aspects of analytical chemistry such as gas analysis and technical analysis, as well as aspects of inorganic chemistry such as inorganic polymers and gases could be expanded.

Consortial purchasing has advanced the collection though acquisition of materials in electronic book format. The Chemistry program has also benefitted from the library’s participation in consortia to purchase electronic journals.
Journal collections are particularly strong with a wide selection of electronic titles and select print subscriptions forming a solid base for access to current research. The Library provides access to a number of suites of electronic journals through participation in the Canadian Research Knowledge Network (CRKN) and consortial subscriptions through the Ontario Council of University Libraries (OCUL). Included are journals from the Royal Society of Chemistry Journals and the American Chemical Society.

10. **Thunder Bay and Regional Resources**

The Paterson Library Commons at Confederation College contains a small selection of monographs of relevance to introductory chemistry, organic chemistry and biochemistry. The Thunder Bay Public Library has a limited collection of introductory, reference and popular science material that may be suitable for first year students or for general interest reading.

11. **Internet Resources**

The Library maintains links to Chemistry resources on the Internet via the electronic Chemistry subject guide. Additional guides with relevant content are available in Mathematics, Engineering, Physics, Geology, Environmental Studies and Biology.

12. **Liaison:**

The Department of Chemistry is responsible for selecting appropriate library resources. A library representative from the Department liaises with a designated Collections Development Librarian with respect to the Department’s library budget, the acquisition process, and consortia projects and serials management. It is the responsibility of the Collections Development Librarian to ensure relevant information regarding new publications is forwarded to the Department’s representative for consideration. The Library accepts donations of books and journals which fall within its collection scope.

13. **Weeding.**

Weeding will be done on an ongoing basis to preserve the quality, currency and strength of the collection.

*May 2013*
Collection Policy

Chemistry

Library Representative
Department of Chemistry

May 28, 2013

Date

Collection Development Librarian

Date