**COMBINED MAJOR IN SCIENCE**

http://www.cms.science.ubc.ca/home

Chemistry (CHEM), Mathematical Sciences (MASC) - Mathematics, Physics & Astronomy – Astronomy (ASTR)

### First Year

- **MATH 100** (or equiv.)
- **MATH 101** (or equiv.)
- **CHEM 121** or **120+115** or **CHEM 111 or 110+115**
- **CHEM 123** or **130+135**
- **Computing Req. (see page 2)**
- **PHYS 101** or **107 or 117 or 131**
- **PHYS 118 + 119 or 108+109**
- **Communication (See page 2)**

### Second Year

- **STAT 200** (or equiv.)
- **MATH 215**
- **CHEM 233 +235 or CHEM 203 or 223+225**
- **CHEM 205 or 208 or 213 or 211 or 210+215**
- **MATH 217** (or **200 + 317**)
- **MATH 221 or 223**
- **PHYS 200**
- **PHYS 203**
- **Arts (See page 2)**

### Third and Fourth Year

- **SCIE 300**
- **PHYS 219 + 229 recom.**
- **CHEM 341**
- **CHEM pkg Course 1**
- **MATH pkg Course 1**
- **MATH pkg Course 2**
- **MATH pkg Course 3**
- **ASTR pkg Course 1 (3 cr)**
- **PHYS pkg Course 1 (3 cr)**
- **PHYS pkg Course 1 (3 cr)**
- **Arts (See page 2)**

1. **CHEMISTRY (CHEM) CMS PKG COURSES:**
   - 6 credits CHEM courses 300- or 400-level (except: CHEM 300, CHEM 348)

2. **MATHEMATICAL SCIENCES (MASC) - MATH CMS PKG COURSES:**
   - MATH courses at the 300- or 400-level; recommended: MATH 302, 307, 317, 340, 360
   - Some courses may have additional pre-requisites!
   - Pay particular attention to the credit-exclusion list (UBC calendar)

3. **PHYSICS (PHYS) CMS PKG COURSES:**
   - All PHYS courses at the 300- or 400-level, except PHYS 348

4. **ASTRONOMY (ASTR) CMS PKG COURSES:**
   - ASTR 300, 333, 403, 406, 407

NOTE: THIS IS A VERY HEAVY AND AMBITIOUS COMBINATION OF PACKAGES
LOWER LEVEL REQUIREMENTS FOR BSC:
http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1465

CMS LAB REQUIREMENT
Must take 2 of the following:

- **CHEM 315 or 355** (1 cr) - Prerequisites: one of CHEM 233+235, CHEM 203 or 223 + 225, CHEM 205, CHEM 208, CHEM 211 or CHEM 210+215.
- **EOSC 442** (1 cr) - Prerequisites: EOSC 340, and one of CPSC 103, CPSC 110, CPSC111, CPSC 301, EOSC 211, PHYS 210, MATH 210, and one of STAT 200, STAT241, STAT251, BIOL300
- **BIOL 342** (2 cr) - Prerequisite: BIOL 121, 140 or 180
- **PHYS 309** (3 cr) - Prerequisite: PHYS 219 and PHYS 229 (PHYS 219 has multiple prerequisites)

CMS CORE COURSES:

- **MATH 100/101** (or equivalent)
- **STAT 200** (or STAT 241 or STAT 251 or BIOL 300)
- **SCIE 300** (Communicating Science)
- **Computing Requirement:** one of: CPSC 100, CPSC 103, CPSC 110 (or 111), CPSC 301, EOSC 211, MATH 210, PHYS 210
- **Generalist Requirement:** only required for students who entered the CMS program prior to 2019S. These students take one (at least 3 cr) of BIOL 112, 121, 345, 346, 438, EOSC 340, 326, 477, 453, 354, 329

CMS GRADUATION CHECKLIST TABLE:
Review Upper Level B.Sc. Requirements:

<table>
<thead>
<tr>
<th>CREDIT TOTALS</th>
<th>Completed</th>
<th>In Progress</th>
<th>Total</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Credits:</strong> includes all UBC courses, transfer credits &amp; advance credits. DO NOT count paired courses, COOP credits, or courses “not for credit in the Faculty of Science”.</td>
<td></td>
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<td>120</td>
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<tr>
<td><strong>Science Credits:</strong> includes all required &amp; elective Science courses at all year levels.</td>
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<td>72</td>
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<tr>
<td><strong>Communication Credits:</strong> six credits from ENGL 100, 110, 111, 120, 121; SCIE 113 (recommended); CHEM 300; APSC 176; ASTU 100, 150; or WRDS 150 (recommended); their equivalents; SCIE 300 (required)</td>
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<td>6</td>
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<td><strong>Arts Credits:</strong> includes arts courses at all year levels.</td>
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<td>12</td>
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<tr>
<td><strong>Upper-Level Credits:</strong> includes all courses at the 300-level and 400-level in any field (Arts, Science, and a maximum of 18 &quot;Other&quot; cr.).</td>
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<td>48</td>
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<tr>
<td><strong>Upper-Level Science Credits:</strong> includes all Science courses at the 300-level and 400-level required for program.</td>
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<td>32 – 38*</td>
</tr>
</tbody>
</table>

* Number of credits will depend on selection of lab and generalist requirements.

Review CMS information in Calendar:
http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1474