## COMBINED MAJOR IN SCIENCE

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

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

### First Year

- **Mathematics (MATH)**
  - □ MATH 100 (or equiv.)
  - □ MATH 101 (or equiv.)

- **Chemistry (CHEM)**
  - □ CHEM 121 (or 111)
  - □ CHEM 123

- **Mathematics, Physics & Astronomy (PHYS)**
  - □ PHYS 101 or 107 or 117
  - □ PHYS 118 + 119 (or 102, or 108+109)

- □ Computing req. (see page 2)

- □ Communication (See page 2)

### Second Year

- **Mathematics (MATH)**
  - □ MATH 217 (or 200)

- **Chemistry (CHEM)**
  - □ CHEM 233, 235
  - □ CHEM 205 or 208 or 211 or 213

- **Mathematics, Physics & Astronomy (PHYS)**
  - □ PHYS 200

- □ (PHYS 219 + 229 recom.)

- □ Communication (See page 2)

### Third and Fourth Year – See below for specific information on packages

- **Mathematics (MATH)**
  - □ MATH pkg Course 1

- **Chemistry (CHEM)**
  - □ CHEM pkg Course 1

- **Physics & Astronomy (PHAS)**
  - □ PHAS pkg Course 1 (3 cr)

- □ Arts (See page 2)

### Generalist req. (see page 2)

### Third and Fourth Years

- □ SCIE 300

- □ CHEM 341

- □ MATH pkg Course 1

- □ MATH pkg Course 2

- □ MATH pkg Course 2

- □ MATH pkg Course 3

- □ Lab req. (See page 2)

- □ Lab req. (See page 2)

- □ PHAS pkg Course 2 (3 cr)

- □ PHAS pkg Course 2 (3 cr)

- □ PHAS pkg Course 2 (3 cr)

- □ PHAS pkg Course 2 (3 cr)

- □ PHAS pkg Course 2 (3 cr)

- □ Arts (See page 2)

### Third and Fourth Years

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. **PHYSICS & ASTRONOMY (PHAS) CMS PKG COURSES:**
   - All PHYS and ASTR courses at the 300- or 400-level, except PHYS 348
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** (1 cr) - Prerequisites: one of CHEM 233+235, CHEM 205, CHEM 208, CHEM 211
- **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
- **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: one** (at least 3 cr) of BIOL 112, 121, 345, 346, 438, EOSC 340, 326, 477, 453, 354, 329, GEOB400

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, 112 (recommended), 120, 121; SCIE 113; SCIE 300 or CHEM 300; APSC 176; ASTU 100, 150; or WRDS 150; their equivalents</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>
</tr>
<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 “Other” cr.).</td>
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<td>48</td>
</tr>
<tr>
<td><strong>Upper-Level Science Credits</strong>: includes all Science courses at the 300-level and 400-level required for program.</td>
<td></td>
<td></td>
<td></td>
<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