## COMBINED MAJOR IN SCIENCE

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

Chemistry (CHEM), Mathematical Sciences – INTERFACE (any option),

Physics & Astronomy – Astronomy (ASTR)

### First Year
- **Mathematics (MATH)**
  - MATH 100 (or equiv.)
  - MATH 101 (or equiv.)

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

- **Computing**
  - Computing req. (see p. 2)
  - CPSC 110 or 111 (Interface A, C, D)

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

- **Communication** (See page 2)

### Second Year
- **Mathematics (MATH)**
  - MATH 221

- **Chemistry (CHEM)**
  - CHEM 205 or 208 or 211 or 213

- **Physics (PHYS)**
  - PHYS 203

- **Arts** (See page 2)

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

- **Mathematics (MATH)**
  - MATH 217 (or 200 + 317)

- **Chemistry (CHEM)**
  - CHEM 233, 235

- **Physics (PHYS)**
  - PHYS 200

- **Arts** (See page 2)

- **Computer Science (CPSC)**
  - CPSC 110 or 111

### Third and Fourth Years
- **Chemistry (CHEM)**
  - CHEM pkg Course 1
  - CHEM pkg Course 2
  - Lab req. (See page 2)

- **Physics (PHYS)**
  - PHYS pkg Course 1 (3 cr)

- **Astronomy (ASTR)**
  - ASTR pkg Course 1 (3 cr)
  - ASTR pkg Course 2 (3 cr)

### Generalist req. (see page 2)

### Interfaces

#### Interface A
- Prerequisites: CPSC 110 or 111, MATH 200, 221; Package courses: two of: MATH/STAT 302, MATH 303, STAT 305; one of: CPSC 302, CPSC 303

#### Interface B
- Prerequisites: MATH 200, 221; Package courses: all of: MATH/STAT 302, MATH 303, STAT 305

#### Interface C
- Prerequisites: CPSC 110 or 111, 121, 210 or, 221, MATH 200, 221; Package courses: all of: CPSC 340, STAT 306, STAT 406

### Course Requirements

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

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

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

4. **MATHEMATICAL SCIENCES (MASC) – INTERFACES A – D CMS PKG COURSES:**
   - Select one of the following Interface options:
     - **Interface A** – Prerequisites: CPSC 110 or 111, MATH 200, 221; Package courses: two of: MATH/STAT 302, MATH 303, STAT 305; one of: CPSC 302, CPSC 303
     - **Interface B** – Prerequisites: MATH 200, 221; Package courses: all of: MATH/STAT 302, MATH 303, STAT 305
     - **Interface C** – Prerequisites: CPSC 110 or 111, 121, 210 or, 221, MATH 200, 221; Package courses: all of: CPSC 340, STAT 306, STAT 406
• Interface D – Prerequisites: CPSC 110 or 111, 121, 210 or, 221, MATH 200, 221; Package courses: all of: CPSC 302, 402, MATH 307

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 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). Please note that this course does not count as a PHYS package course unless you take two other lab courses to fulfill the lab requirement.

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>Total Credits: 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>
<td></td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>Science Credits: includes all required &amp; elective Science courses at all year levels.</td>
<td></td>
<td></td>
<td></td>
<td>72</td>
</tr>
<tr>
<td>Communication Credits: 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>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Arts Credits: includes arts courses at all year levels.</td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Upper-Level Credits: includes all courses at the 300-level and 400-level in any field (Arts, Science, and a maximum of 18 “Other” cr.).</td>
<td></td>
<td></td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Upper-Level Science Credits: 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