### 1.0 Degree Title
Specify the two degrees for concurrent degree programs

| B.Sc. |

### 1.1 Major (Legacy = Subject) (30-char. max.)

Physics and Chemistry

### 1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

### 1.3 Minor (with Concentration, if applicable)
(30 char. max.)

### 1.4 Category

- Faculty Program (FP)
- Major
- Joint Major
- Major Concentration (CON)
- Minor
- Minor Concentration (CON)
- Honours (HON)
- Joint Honours Component (HC)
- Internship/Co-op
- Thesis (T)
- Non-Thesis (N)
- Other
- Please specify

### 1.5 Complete Program Title

Joint Honours in Physics and Chemistry

### 2.0 Administering Faculty/Unit

Science

### Offering Faculty/Department

Physics

### 3.0 Effective Term of revision or retirement
Please give reasons in 8.0 “Rationale” in the case of retirement
(Ex. Sept. 2004 = 200409)

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### 4.0 Existing Credit Weight

| 80 |

### Proposed Credit Weight

| 77 |

### 5.0 Description (Maximum 150 words)


### 6.0 List of existing program and proposed program

#### Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

- CHEM 213 (3) Introductory Physical Chemistry
- CHEM 273 (1) Chemical Kinetics
- MATH 247 (3) Linear Algebra
- MATH 248 (3) Advanced Calculus 1
- MATH 249 (3) Advanced Calculus 2
- MATH 325 (3) Ordinary Differential Equations
- PHYS 241 (3) Signal Processing
- PHYS 251 (3) Classical Mechanics 1
- PHYS 257 (3) Experimental Methods 1
- PHYS 258 (3) Experimental Methods 2

#### Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

- CHEM 213 (3) Introductory Physical Chemistry
- CHEM 273 (10) Chemical Kinetics
- MATH 247 (3) Linear Algebra
- MATH 248 (3) Advanced Calculus 1
- MATH 249 (3) Advanced Calculus 2
- MATH 325 (3) Ordinary Differential Equations
- PHYS 241 (3) Signal Processing
- PHYS 251 (3) Classical Mechanics 1
- PHYS 257 (3) Experimental Methods 1
- PHYS 258 (3) Experimental Methods 2
### Existing program (Continued)

#### U2 Required Courses (29 credits)
- CHEM 212 (4) Introductory Organic Chemistry
- CHEM 281 (3) Inorganic Chemistry 1
- CHEM 355 (3) Molecular Properties and Structure 2
- CHEM 363 (2) Physical Chemistry Laboratory 1
- CHEM 365 (2) Statistical Thermodynamics
- COMP 208 (3) Computers in Engineering
- PHYS 253 (3) Thermal Physics
- PHYS 350 (3) Electromagnetism
- PHYS 357 (3) Quantum Physics
- PHYS 457 (3) Quantum Physics

#### U3 Required Courses (14 credits)
- CHEM 393 (2) Physical Chemistry Laboratory 2
- CHEM 455 (3) Introductory Polymer Chemistry
- CHEM 556 (3) Advanced Quantum Mechanics
- PHYS 352 (3) Electromagnetic Waves
- PHYS 558 (3) Solid State Physics

#### U3 Complementary Courses (12 credits)
- 3 credits selected from:
  - CHEM 593 (3) Statistical Mechanics
  - PHYS 559 (3) Advanced Statistical Mechanics
- 9 credits selected from:
  - CHEM 480 (3) Research Project
  - CHEM 490 (3) Research Project
  - CHEM 531 (3) Chemistry of Inorganic Materials
  - CHEM 575 (3) Chemical Kinetics
  - CHEM 585 (3) Colloid Chemistry
  - MATH 375 (3) Differential Equations
  - PHYS 434 (3) Optics
  - PHYS 451 (3) Classical Mechanics
  - PHYS 469 (3) Laboratory in Modern Physics 2
  - PHYS 479 (3) Honours Research Project
  - PHYS 562 (3) Electromagnetic Theory

### Proposed program (Continued)

#### U2 Required Courses (26 credits)
- CHEM 212 (4) Introductory Organic Chemistry
- CHEM 281 (3) Inorganic Chemistry 1
- CHEM 355 (3) Molecular Properties and Structure 2
- CHEM 363 (2) Physical Chemistry Laboratory 1
- CHEM 365 (2) Statistical Thermodynamics
- COMP 208 (3) Computers in Engineering
- PHYS 350 (3) Electromagnetism
- PHYS 357 (3) Quantum Physics
- PHYS 457 (3) Quantum Physics

#### U3 Required Courses (14 credits)
- CHEM 393 (2) Physical Chemistry Laboratory 2
- CHEM 455 (3) Introductory Polymer Chemistry
- CHEM 556 (3) Advanced Quantum Mechanics
- PHYS 352 (3) Electromagnetic Waves
- PHYS 558 (3) Solid State Physics

#### U3 Complementary Courses (12 credits)
- 3 credits selected from:
  - CHEM 593 (3) Statistical Mechanics
  - PHYS 559 (3) Advanced Statistical Mechanics
- 9 credits selected from:
  - CHEM 480 (3) Research Project
  - CHEM 490 (3) Research Project
  - CHEM 531 (3) Chemistry of Inorganic Materials
  - CHEM 575 (3) Chemical Kinetics
  - CHEM 585 (3) Colloid Chemistry
  - MATH 375 (3) Differential Equations
  - PHYS 434 (3) Optics
  - PHYS 451 (3) Classical Mechanics
  - PHYS 469 (3) Laboratory in Modern Physics 2
  - PHYS 479 (3) Honours Research Project
  - PHYS 562 (3) Electromagnetic Theory
7.0 Consultation with Related Units

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<th>Financial Consult</th>
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Attach list of consultations.

8.0 Rationale

PHYS 253 and CHEM 213 cover similar material and so PHYS 253 has been deleted from the program. This has the added benefit of reducing the credit load from 80 to 77.

9.0 Approvals

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<tr>
<td>Department</td>
<td>M. Sutton</td>
<td></td>
<td>Nov 5, 2004</td>
</tr>
<tr>
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Submitted by

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To be completed by ARR:

CIP Code