This sample unit outline is provided by CHC for prospective and current students to assist with unit selection.

Elements of this outline which may change with subsequent offerings of the unit include Content, Required Texts, Recommended Readings and details of the Assessment Tasks.

Students who are currently enrolled in this unit should obtain the outline for the relevant semester from the unit lecturer.
<table>
<thead>
<tr>
<th><strong>Unit code</strong></th>
<th>CR270</th>
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<tbody>
<tr>
<td><strong>Unit name</strong></td>
<td>Physical and Chemical Sciences for Primary Years</td>
</tr>
<tr>
<td><strong>Associated higher education awards</strong></td>
<td>Bachelor of Education (Primary)</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>One semester</td>
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<tr>
<td><strong>Level</strong></td>
<td>Advanced</td>
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<tr>
<td><strong>Core/elective</strong></td>
<td>Elective</td>
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</table>
| **Weighting** | Unit credit points: 10  
Course credit points: Bachelor of Education (Primary) 320 |
| **Delivery mode** | Face-to-face on site |
| **Student workload** | *Face-to-face on site*  
Contact hours 30 hours  
Reading, study and assignment preparation 120 hours  
**TOTAL** 150 hours |
| **Prerequisites/co-requisites/restrictions** | **Prerequisite:**  
10 credit points of 100-level Science units |
| **Rationale** | In a time when science and technology have and will continue to have an enormous impact on society, it is important that teaching and learning in science keeps pace with current developments in science. Developing engaging practices in the classroom will encourage primary students to participate in scientific inquiry processes and help to motivate students to continue developing their interest in science.  
This unit will prepare preservice teachers to engage primary students with the scientific strands of chemistry and physics. The unit focuses preservice teachers to develop scientific literacy in these areas. In conjunction with developing best practice in pedagogical strategies for teaching physical and chemical sciences in the primary years - preservice teachers will investigate ways that physical and chemical sciences reveal the order of God’s creation. |
| **Prescribed text(s)** | Selected readings will be available via the Moodle™ site for this unit. |
| **Recommended readings** | **Books**  
### Journals

**Double Helix**

**Perspectives on Science and Christian Faith**

In addition to the resources above, students should have access to a Bible, preferably a modern translation such as The Holy Bible: The New International Version 2011 (NIV 2011) or The Holy Bible: New King James Version (NKJV).

These and other translations may be accessed free on-line at [http://www.biblegateway.com](http://www.biblegateway.com). The Bible app from LifeChurch.tv is also available free for smart phones and tablet devices.

### Specialist resource requirements

Nil

### Content

1. Strands from the Science National Curriculum P-6, specifically in the teaching of physical and chemical sciences:
   - Energy and change: introduction to the physical sciences
   - Energy: kinetic and potential
   - Energy conservation and transfer; heat energy
   - Simple machines and energy
   - Laws of motion: Inertia, Friction, Gravity, and Pendulums
   - Chemical changes/Physical changes
   - Chemical conservation and transfer
   - Chemical energy and chemical equations
   - Chemical reaction rates
2. Scientific inquiry skills for teaching physical and chemical sciences in primary contexts
3. Teaching strategies and resources for teaching physical and chemical sciences in primary contexts
4. Integrating literacy, numeracy and digital dimensions within the teaching of physical and chemical sciences in primary contexts
5. Physical and chemical sciences revealing God’s created order

### Learning outcomes

On completion of this unit, preservice teachers will have provided evidence that they have:

1. developed knowledge, understanding and application of scientific inquiry skills for physical and chemical science;
2. identified the literate, numerate and digital demands expected of students in physical and chemical sciences in the primary years;
3. developed innovative pedagogies for teaching physical and chemical sciences in the primary years;
4. investigated the ways physical and chemical sciences reveal God’s order in creation;
5. evaluated and reflected on the effectiveness of innovative practices for teaching physical and chemical sciences in the primary years; and
6. communicated at an appropriate tertiary standard: with special attention to design elements, grammars, usage, logical relations, style, referencing and presentation.

### Assessment tasks

**Task 1: Experimental Report**

Laboratory Exercises and Reports

Word length/Duration: 1500 words

Weighting: 40%

Learning Outcomes: 1-4, 6

Assessed: Week 6
<table>
<thead>
<tr>
<th>Task 2: Scientific Folio</th>
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<tbody>
<tr>
<td>Learning sequence and associated resources</td>
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<tr>
<td>Word length/Duration: 2000 words</td>
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<tr>
<td>Weighting: 60%</td>
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<tr>
<td>Learning Outcomes: 1-6</td>
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<tr>
<td>Assessed: Week 10</td>
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<thead>
<tr>
<th>Unit summary</th>
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<tbody>
<tr>
<td>Students will develop scientific literacy in the areas of physical and chemical sciences in primary contexts. They will also investigate how physical and chemical sciences reveal God’s creation. Students will also develop innovative pedagogies for teaching in these areas.</td>
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