1.0 Degree Title
Specify the two degrees for concurrent degree programs

1.1 Bachelor of Science

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)
Physiology and Physics

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

1.4 Category
- Liberal Program
- Faculty Program (FP)
- Major
- X Joint Major
- Major Concentration (CON)
- Minor
- Minor Concentration (CON)

1.5 B.Sc.: Physiology and Physics

2.0 Administering Faculty/Unit
Faculty of Science

2.1 Offering Faculty/Department
Faculty of Medicine/Department of Physiology

3.0 Effective Term of revision or retirement
Please give reasons in 5.0 "Rationale" in the case of retirement
(Ex. Sept. 2004 = 200409) Retirement

Term: 201409

4.0 Existing Credit Weight
80

4.1 Proposed Credit Weight
80

5.0 Rationale for revised program
PHGY 209 and 210 are now added in the U1 year as required courses as it was incorrectly listed in the complementary listing and they are prerequisites to U2 required courses.
MATH 315 (or MATH 325) must be taken in U1, and not in U2 as presently listed, since it is a prerequisite to MATH 437 and PHYS 413, one of which is taken by all students in U2 (MATH 437 and PHYS 413 are given in alternate years).
PHYS 241 is added in the U1 year as a required course to replace PHYS 328, which was incorrectly included in the program (in fact, PHYS 241 is a prerequisite to PHYS 328). PHYS 241 must be taken in U1 as it is a prerequisite to PHYS 339, a required U2 course.

6.0 Revised Program Description (Maximum 150 words)
<table>
<thead>
<tr>
<th>Major in Physiology &amp; Physics (80 credits)</th>
<th>Major in Physiology &amp; Physics (80 credits)</th>
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<tbody>
<tr>
<td><strong>U1 Required Courses (17 credits)</strong></td>
<td><strong>U1 Required Courses (17-26 credits)</strong></td>
</tr>
<tr>
<td>* The corequisite BIOL 200, BIOL 201 is waived for this program.</td>
<td>* The corequisite BIOL 200, BIOL 201 is waived for this program.</td>
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<tr>
<td>MATH 222 Calculus 3 (3 credits)</td>
<td>MATH 222 Calculus 3 (3 credits)</td>
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<tr>
<td>PHGY 212 Introductory Physiology Laboratory I (1 credit) *</td>
<td>PHGY 209 Mammalian Physiology 1 (3 credits)*</td>
</tr>
<tr>
<td>PHGY 213 Introductory Physiology Laboratory 2 (1 credit) *</td>
<td>PHGY 210 Mammalian Physiology 2 (3 credits)*</td>
</tr>
<tr>
<td>PHYS 230 Dynamics of Simple Systems (3 credits)</td>
<td>PHYS 212 Introductory Physiology Laboratory 1 (1 credit) *</td>
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<tr>
<td>PHYS 232 Heat and Waves (3 credits)</td>
<td>PHYS 213 Introductory Physiology Laboratory 2 (1 credit) *</td>
</tr>
<tr>
<td>PHYS 257 Experimental Methods 1 (3 credits)</td>
<td>PHYS 230 Dynamics of Simple Systems (3 credits)</td>
</tr>
<tr>
<td>PHYS 258 Experimental Methods 2 (3 credits)</td>
<td>PHYS 232 Heat and Waves (3 credits)</td>
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<tr>
<td><strong>U2 Required Courses (21 credits)</strong></td>
<td><strong>U2 Required Courses (24-18 credits)</strong></td>
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<tr>
<td>MATH 326 Nonlinear Dynamics and Chaos (3 credits)</td>
<td>MATH 326 Nonlinear Dynamics and Chaos (3 credits)</td>
</tr>
<tr>
<td>PHGY 311 Channels, Synapses &amp; Hormones (3 credits)</td>
<td>PHGY 311 Channels, Synapses &amp; Hormones (3 credits)</td>
</tr>
<tr>
<td>PHGY 312 Respiratory, Renal, &amp; Cardiovascular Physiology (3 credits)</td>
<td>PHGY 312 Respiratory, Renal, &amp; Cardiovascular Physiology (3 credits)</td>
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<tr>
<td>PHGY 313 Blood, Gastrointestinal, &amp; Immune Systems Physiology (3 credits)</td>
<td>PHGY 313 Blood, Gastrointestinal, &amp; Immune Systems Physiology (3 credits)</td>
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<tr>
<td>PHYS 328 Electronics (3 credits)</td>
<td>PHGY 314 Integrative Neuroscience (3 credits)</td>
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<tr>
<td>PHYS 339 Measurements Laboratory in General Physics (3 credits)</td>
<td>PHYS 328 Electronics (3 credits)</td>
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<tr>
<td><strong>U2 or U3 Required Courses (6 credits)</strong></td>
<td><strong>U2 or U3 Required Courses (6 credits)</strong></td>
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<tr>
<td>MATH 437 Mathematical Methods in Biology (3 credits)</td>
<td>(Note: These courses are offered in alternate years)</td>
</tr>
<tr>
<td>PHYS 413 Physical Basis of Physiology (3 credits)</td>
<td>MATH 437 Mathematical Methods in Biology (3 credits)</td>
</tr>
<tr>
<td><strong>U3 Required Courses (21 credits)</strong></td>
<td>PHYS 413 Physical Basis of Physiology (3 credits)</td>
</tr>
<tr>
<td>BMDE 519 Biomedical Signals and Systems (3 credits)</td>
<td><strong>U3 Required Courses (21 credits)</strong></td>
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<tr>
<td>PHGY 461D1 Experimental Physiology (4.5 credits)</td>
<td>BMDE 519 Biomedical Signals and Systems (3 credits)</td>
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<tr>
<td>PHGY 461D2 Experimental Physiology (4.5 credits)</td>
<td>PHGY 461D1 Experimental Physiology (4.5 credits)</td>
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<tr>
<td>PHYS 333 Thermal and Statistical Physics (3 credits)</td>
<td>PHGY 461D2 Experimental Physiology (4.5 credits)</td>
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<tr>
<td>PHYS 340 Majors Electricity and Magnetism (3 credits)</td>
<td>PHYS 333 Thermal and Statistical Physics (3 credits)</td>
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<tr>
<td>PHYS 446 Majors Quantum Physics (3 credits)</td>
<td>PHYS 340 Majors Electricity and Magnetism (3 credits)</td>
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<td>PHYS 446 Majors Quantum Physics (3 credits)</td>
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<tr>
<td>Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)</td>
<td>Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)</td>
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| U1 Complementary Courses (9 credits)  
3 credits, one of:  
MATH 223 Linear Algebra (3 credits)  
MATH 247 Honours Applied Linear Algebra (3 credits)  
6 credits selected as follows:  
** The corequisite BIOL 200, BIOL 201 is waived for this program.  
PHGY 209 Mammalian Physiology 1 (3 credits)  
PHGY 210 Mammalian Physiology 2 (3 credits) **  | U1 Complementary Courses (9 credits)  
3 credits, one of:  
MATH 315 Ordinary Differential Equations (3 credits)  
MATH 325 Honours Ordinary Differential Equations (3 credits)  
6 credits selected as follows:  
** The corequisite BIOL 200, BIOL 201 is waived for this program.  
PHGY 209 Mammalian Physiology 1 (3 credits)  
PHGY 210 Mammalian Physiology 2 (3 credits) **  |
| U2 Complementary Courses (6 credits)  
3 credits, one of:  
MATH 315 Ordinary Differential Equations (3 credits)  
MATH 325 Honours Ordinary Differential Equations (3 credits)  
3 credits, one of:  
MATH 248 Honours Advanced Calculus (3 credits)  
MATH 314 Advanced Calculus (3 credits)  | U2 Complementary Courses (6 credits)  
3 credits, one of:  
MATH 315 Ordinary Differential Equations (3 credits)  
MATH 325 Honours Ordinary Differential Equations (3 credits)  
3 credits, one of:  
MATH 248 Honours Advanced Calculus (3 credits)  
MATH 314 Advanced Calculus (3 credits)  |

*Attach extra page(s) as needed*
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<tr>
<th>8.0 Consultation with Listed Units</th>
<th>Yes</th>
<th>No</th>
<th>Financial Consult</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Attach list of consultations</td>
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<th>9. Approvals</th>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>Routing Sequence</td>
<td>Department</td>
<td>Dr John Ortowski</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Curric/Acad Committee</td>
<td>Dr Ragdale, Chair</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faculty 1</td>
<td>Dr Davis, Assoc Dean</td>
<td></td>
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<tr>
<td></td>
<td>Faculty 2</td>
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<td>Senate</td>
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Submitted by

<table>
<thead>
<tr>
<th>Name</th>
<th>Sona Vasilov</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>514-396-5969</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:sona.vasilov@mcmillan.ca">sona.vasilov@mcmillan.ca</a></td>
</tr>
<tr>
<td>Submission Date</td>
<td>February 13, 2014</td>
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To be completed by ARR:

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<th>CIP Code</th>
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CONSULTATION REPORT FORM
RE COURSE/PROGRAM PROPOSALS

DATE: February 13, 2014

TO: Professor G. Moore
    Department of Physics

FROM: Sonia Viselli
      Department of Physiology

The attached proposal will be submitted to the Curriculum/Academic Committee in Faculty of Science, and since it is the joint Major Physiology and Physics it is necessity that we consult with your department.

Can you please review this proposal and let me know as soon as possible, on this form, whether or not your department has any objections to, or comments regarding, the proposal.

_____________ X __________ NO OBJECTIONS ___________________________________ SOME OBJECTIONS

COMMENTS: Physics views these changes as long overdue and necessary to free the program from unlisted prerequisites and prerequisite conflicts.

______________________________
Signature: Guy D Moore (sent electronically)

______________________________
Date: 26 February 2014