



Lakehead University
Faculty of Science and Environmental Studies
 Physics

REQUEST REPORT

Request Tracking Number: 2015-SCI-5289
Request Title: Program-changes-UG-PHYSICS-ICR update

[DeAcTerm[EffectiveDate]] [DeAc[RequestEffectiveDate]]
Request Status: In Workflow
 Request can be split

Request Contents

Type	Title
1. New Version of a Degree	BSc (Physics Major)
2. New Version of a Degree	Honours BSc (Physics) with Major Concentration in Biomedical Physics
3. New Version of a Degree	Honours BSc (Physics Major)

Request History

Workflow Step	Workflow Action	User	Change Made	Comments	Date
Initiator	Approved	Kristine Carey	Yes	Submitted to workflow	10/27/2015
Submission Review (Academic & Curriculum Development Coordinator)	Approved	submission review	No	Approved	10/29/2015

Supporting Documents

File Name	Uploaded By	Upload Date	Size
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Supporting Documents Audit Trail

File Name	User	Date	Action
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Notes

Date	User	Note
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1.	New Version of a Degree	BSC.PHYS - BSc (Physics Major)
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Degree Details

CURRENT VERSION	PROPOSED VERSION
BSC.PHYS - BSc (Physics Major) Start Term: Fall 2013 End Term: No Specified End Date	BSC.PHYS - BSc (Physics Major) Start Term: Fall 2013 2016-17 End Term: No Specified End Date

<u>Required Information</u>	
CURRENT VERSION	PROPOSED VERSION
Institution Unit Faculty of Science and Environmental Studies	Institution Unit Faculty of Science and Environmental Studies
Degree Type BSC	Degree Type BSC
Major PHYS	Major PHYS
Minor	Minor
Specialization	Specialization
Rationale 2012-SCI-417 replace PHYS 1101 with two half-courses, PHYS 1211 and 1212, and associated program change for BSC.PHYS.	Rationale 2012-SCI-417 replace PHYS 1101 with two half-courses, PHYS 1211 and 1212, and associated program change for BSC.PHYS. <i>The change is being made to meet University policy re: ICR content.</i>
Requirements Three Year program The student is referred to the Faculty of Science and Environmental Studies Faculty Regulations requirement on the necessary average mark to continue in a physics major program. First Year: (a) Physics 1211 and 1212 (b) Mathematics 1171 and 1172 (c) Chemistry 1110, 1130 (d) One and one-half FCE elective (e) Computer Science 0411 or 1411 Second Year: (a) Physics 2111, 2151, 2211, 2311, 2331 and 2332 (b) Mathematics 2111 and 2131 (c) One FCE elective Third Year:	Requirements Three Year program The student is referred to the Faculty of Science and Environmental Studies Faculty Regulations requirement on the necessary average mark to continue in a physics major program. First Year: (a) Physics 1211 and 1212 (b) Mathematics 1171 and 1172 (c) Chemistry 1110, 1130 (d) One and one-half FCE elective (e) <i>One-half FCE from Type E course list*</i> (f) Computer Science 0411 or 1411 Second Year: (a) Physics 2111, 2151, 2211, 2311, 2331 and 2332 (b) Mathematics 2111 and 2131 (c) One FCE elective

<p>(a) Physics 3113, 3211 and 3231 (b) One half-course in Physics at the third or fourth year level (c) Mathematics 3131 and 3133 (d) Two FCE electives</p> <p>Further Requirements: 1. Lakehead University allows no more than seven FCE first year courses to be taken. 2. Lakehead University requires that no first year course be taken in the third year without written approval of the Dean of Science and Environmental Studies.</p> <p>HBSc (Computer Science) Hardware Option The Honours BSc (Computer Science) Hardware Option is designed for students interested in computer hardware and software, computer controlled instrumentation, virtual reality modelling, and simulation of physical systems. Students wishing to complete the requirements for a BSc in Physics following the HBSc (Computer Science) Hardware Option program must complete Chemistry 1110/1130 and Physics 2111 and 3113 and have a total of at least 6 FCEs in Physics. See Department of Computer Science, Computer Science Programs.</p>	<p>Third Year:</p> <p>(a) Physics 3113, 3211 and 3231 (b) One half-course in Physics at the third or fourth year level (c) Mathematics 3131 and 3133 (d) Two FCE electives</p> <p><i>*The Indigenous Content Requirement is being met by the inclusion of 0.5 FCE chosen from the list of Type E courses taken as an elective in the 1st year of the program.</i></p> <p>Further Requirements: 1. Lakehead University allows no more than seven FCE first year courses to be taken. 2. Lakehead University requires that no first year course be taken in the third year without written approval of the Dean of Science and Environmental Studies.</p> <p>HBSc (Computer Science) Hardware Option The Honours BSc (Computer Science) Hardware Option is designed for students interested in computer hardware and software, computer controlled instrumentation, virtual reality modelling, and simulation of physical systems. Students wishing to complete the requirements for a BSc in Physics following the HBSc (Computer Science) Hardware Option program must complete Chemistry 1110/1130 and Physics 2111 and 3113 and have a total of at least 6 FCEs in Physics. See Department of Computer Science, Computer Science Programs.</p>
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<u>Budgetary Considerations</u>	
CURRENT VERSION	PROPOSED VERSION
Student Enrolment	Student Enrolment <i>no</i>
Student Enrolment Other Units	Student Enrolment Other Units <i>no</i>
Additional Resources	Additional Resources <i>no</i>
Teaching Loads	Teaching Loads <i>no impact</i>
TeachingSupport Services	TeachingSupport Services <i>no impact</i>
Outside Support	Outside Support <i>no</i>

2.	New Version of a Degree	HBSC.PHBI - Honours BSc (Physics) with Major Concentration in Biomedical Physics
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Degree Details

CURRENT VERSION	PROPOSED VERSION
HBSC.PHBI - Honours BSc (Physics) with Major Concentration in Biomedical Physics Start Term: Fall 2013 End Term: No Specified End Date	HBSC.PHBI - Honours BSc (Physics) with Major Concentration in Biomedical Physics Start Term: Fall 2013 2016-17 End Term: No Specified End Date

<u>Required Information</u>	
CURRENT VERSION	PROPOSED VERSION
Institution Unit Faculty of Science and Environmental Studies	Institution Unit Faculty of Science and Environmental Studies
Degree Type HBSC	Degree Type HBSC
Major PHBI	Major PHBI
Minor	Minor
Specialization	Specialization
Rationale 2012-SCI-172 Name change HBSC.PHAP (Physics with Major Concentration in Applied Bio-Molecular Science change to Physics with Major Concentration in Biomedical Physics) submitted incorrectly as new version. Instead, discontinue old program and create new program. Includes program change associated with new course, Physics 2510, as proposed in 2012-SCI-312.	Rationale 2012-SCI-172 Name change HBSC.PHAP (Physics with Major Concentration in Applied Bio-Molecular Science change to Physics with Major Concentration in Biomedical Physics) submitted incorrectly as new version. Instead, discontinue old program and create new program. Includes program change associated with new course, Physics 2510, as proposed in 2012-SCI-312. <i>The change is being made to meet University policy re: ICR for 2016-2017</i>
Requirements Four Year program A program designed for students interested in medical physics, medicine, biotechnology instrumentation, or biological physics research. A cumulative average of 70% is required in Physics, Biology and Chemistry courses for the HBSc (Physics) with Major Concentration in Biomedical Physics. First Year: (a) Physics 1211 and 1212 (b) Mathematics 1171 and 1172 (c) Chemistry 1110 and 1130	Requirements Four Year program A program designed for students interested in medical physics, medicine, biotechnology instrumentation, or biological physics research. A cumulative average of 70% is required in Physics, Biology and Chemistry courses for the HBSc (Physics) with Major Concentration in Biomedical Physics. First Year: (a) Physics 1211 and 1212 (b) Mathematics 1171 and 1172

<p>(d) One full course equivalent elective (e) Computer Science 0411 or 1411 (f) Biology 2171</p> <p>Second Year: (a) Physics 2151, 2211, 2311, 2331 and 2332 (b) Mathematics 2111 and 2131 (c) Biology 2230 (d) Chemistry 2211 (e) One half-course elective</p> <p>Third Year: (a) Physics 2111, 3113, 3211, 3231 and 3511 (b) Physics 2510 (c) Mathematics 3131 (d) Biology 2711 and 2910 (e) One half-course elective</p> <p>Fourth Year: (a) Physics 4411 and 4412 (b) One half-course elective in Physics (c) One half-course elective in Physics at the third or fourth year level (d) One half-course elective in Physics at the fourth year level (e) Three half-courses (excluding Physics) from the Applied Bio-Molecular Science List of Recommended Courses (see Applied Bio-Molecular Science Programs) (f) One FCE elective</p> <p>Notes: 1. An Honours Physics Thesis (Physics 4501) can be used in place of the lab courses (Physics 4411 and 4412) or as an open elective. It cannot be used to replace Physics electives. 2. Students can switch to the Honours Physics program after second year. 3. Due to course rotation some courses may need to be taken out of sequence.</p>	<p>(c) Chemistry 1110 and 1130 (d) One full course equivalent <i>half FCE</i> elective (e) <i>One-half FCE elective from Type E course list</i> (f) Computer Science 0411 or 1411 (g) Biology 2171</p> <p>Second Year: (a) Physics 2151, 2211, 2311, 2331 and 2332 (b) Mathematics 2111 and 2131 (c) Biology 2230 (d) Chemistry 2211 (e) One half-course elective</p> <p>Third Year: (a) Physics 2111, 3113, 3211, 3231 and 3511 (b) Physics 2510 (c) Mathematics 3131 (d) Biology 2711 and 2910 (e) One half-course elective</p> <p>Fourth Year: (a) Physics 4411 and 4412 (b) One half-course elective in Physics (c) One half-course elective in Physics at the third or fourth year level (d) One half-course elective in Physics at the fourth year level (e) Three half-courses (excluding Physics) from the Applied Bio-Molecular Science List of Recommended Courses (see Applied Bio-Molecular Science Programs) (f) One FCE elective</p> <p>Notes: 1. An Honours Physics Thesis (Physics 4501) can be used in place of the lab courses (Physics 4411 and 4412) or as an open elective. It cannot be used to replace Physics electives. 2. Students can switch to the Honours Physics program after second year. 3. Due to course rotation some courses may need to be taken out of sequence. 4. <i>The Indigenous Content Requirement is being met by the inclusion of 0.5 FCE chosen from the list of Type E courses taken as an elective in the 1st year of the program.</i></p>
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<u>Budgetary Considerations</u>	
CURRENT VERSION	PROPOSED VERSION
Student Enrolment	Student Enrolment <i>no</i>
Student Enrolment Other Units	Student Enrolment Other Units <i>no</i>
Additional Resources	Additional Resources <i>no</i>

Teaching Loads	Teaching Loads <i>no impact</i>
TeachingSupport Services	TeachingSupport Services <i>no impact</i>
Outside Support	Outside Support <i>no</i>

3.	New Version of a Degree	HBSC.PHYS - Honours BSc (Physics Major)
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Degree Details

CURRENT VERSION	PROPOSED VERSION
HBSC.PHYS - Honours BSc (Physics Major) Start Term: Fall 2013 End Term: No Specified End Date	HBSC.PHYS - Honours BSc (Physics Major) Start Term: Fall 2013 2016-17 End Term: No Specified End Date

<u>Required Information</u>	
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Degree Type HBSC	Degree Type HBSC
Major PHYS	Major PHYS
Minor	Minor
Specialization	Specialization
Rationale 2012-SCI-417 replace PHYS 1101 with two half-courses, PHYS 1211 and 1212, and associated program change for HBSC.PHYS.	Rationale 2012-SCI-417 replace PHYS 1101 with two half-courses, PHYS 1211 and 1212, and associated program change for HBSC.PHYS. <i>The change is being made to meet University policy re: ICR</i>
Requirements Four Year program A cumulative average of 70% in all Physics courses is required. First Year: (a) Physics 1211 and 1212 (b) Mathematics 1171 and 1172 (c) Chemistry 1110, 1130 (d) One and one-half FCE elective (e) Computer Science 0411 or 1411 Second Year: (a) Physics 2111, 2151, 2211, 2311, 2331 and 2332 (b) Mathematics 2111 and 2131 (d) One FCE elective Third Year: (a) Physics 3113, 3211 and 3231 (b) Physics 4113 or 4171	Requirements Four Year program A cumulative average of 70% in all Physics courses is required. First Year: (a) Physics 1211 and 1212 (b) Mathematics 1171 and 1172 (c) Chemistry 1110, 1130 (d) <i>One FCE elective</i> (e) One and one -half FCE elective <i>(e from Type E course list*</i> (f) Computer Science 0411 or 1411 Second Year: (a) Physics 2111, 2151, 2211, 2311, 2331 and 2332 (b) Mathematics 2111 and 2131 (d) One FCE elective Third Year:

<p>(c) Physics 3371 or 4211 (d) A Physics half-course elective at the third or fourth year level (e) Mathematics 3131 and 3133 (f) One FCE elective</p> <p>Fourth Year: (a) Physics 4115, 4411 and 4412 (b) Physics 4113 or 4171 (the one not previously taken) (c) Physics 3371 or 4211 (the one not previously taken) (d) A Physics half-course elective at the third or fourth year level (e) Two FCE electives</p>	<p>(a) Physics 3113, 3211 and 3231 (b) Physics 4113 or 4171 (c) Physics 3371 or 4211 (d) A Physics half-course elective at the third or fourth year level (e) Mathematics 3131 and 3133 (f) One FCE elective</p> <p>Fourth Year: (a) Physics 4115, 4411 and 4412 (b) Physics 4113 or 4171 (the one not previously taken) (c) Physics 3371 or 4211 (the one not previously taken) (d) A Physics half-course elective at the third or fourth year level (e) Two FCE electives</p> <p><i>*The Indigenous Content Requirement is being met by the inclusion of 0.5 FCE chosen from the list of Type E courses taken as an elective in the 1st year of the program.</i></p>
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<u>Budgetary Considerations</u>	
CURRENT VERSION	PROPOSED VERSION
Student Enrolment	Student Enrolment <i>no</i>
Student Enrolment Other Units	Student Enrolment Other Units <i>no</i>
Additional Resources	Additional Resources <i>no</i>
Teaching Loads	Teaching Loads <i>no impact</i>
TeachingSupport Services	TeachingSupport Services <i>no impact</i>
Outside Support	Outside Support <i>no</i>