

SCIENCES - Table of Contents

<u>SUMMARY OF COURSE CHANGES</u>	1
<u>New Programs</u>	2
<u>Programs - Resource Implications</u>	3
<u>Deleted Programs</u>	4
<u>Programs - Other Changes</u>	5
<u>New Courses</u>	22
<u>Courses - Resource Implications</u>	24
<u>Deleted Courses</u>	26
<u>Renumbered Courses</u>	28
<u>Courses - Description Changes</u>	29
<u>Changes in Course Name</u>	36
<u>Courses - Other Changes</u>	37

SUMMARY OF COURSE CHANGES

Department Name	No. of full courses deleted	No. of full courses added	No. of half courses deleted	No. of half courses added	No. of full courses changed	No. of half courses changed
Astronomy	0	0	0	0	0	0
Biology	0	0	7	0	0	6
Chemistry	0	0	1	1	2	17
Communication, Culture and Information Technology	0	0	0	0	0	0
Computer Science	0	1	0	3	0	5
Earth Science	0	0	0	0	0	2
Economics	0	0	0	0	2	0
Environment	0	0	0	0	0	0
Forensic Science	0	0	0	0	0	0
Geography	0	0	0	0	0	4
Mathematics	0	0	2	0	0	3
Physics	0	0	1	0	1	5
Psychology	0	0	0	0	1	6
Science	0	0	0	0	0	2
Sociology	0	0	0	0	0	0
Statistics	0	0	0	0	0	4

New Programs

NONE

Programs - Resource Implications

NONE

Deleted Programs

Program #1 ERSPE1082 Ecology (Science)

Ecology (Science): Department no longer offers this program (last offered in 2005-06), now offers an Ecology and Evolution Specialist (ERSPE1020) program that is very similar in content and requirements. Ecology Specialist (ERSPE1082) program currently has no students enrolled in it.

Programs - Other Changes

Program #1 ERMAJ1004 Paleontology (Science)

Rationale for change: Removal of some courses from the 'Third Year and Fourth Year' section is to reflect the deletion of courses that are no longer offered in the Department.

Before:	Third Year and Fourth Year	ERS325H5; BIO319H5/354H5, 356H5, 360H5; GLG360H1
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After:	Third Year and Fourth Year	ERS325H5; BIO354H5, 356H5, 360H5; GLG360H1
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Program #2 ERMAJ1160 Psychology (Science)

Rationale for change: New Statistics course (STA219H5) is included as program option as content is similar to the rest of the courses on this list.

Before:	Higher Years	<ol style="list-style-type: none"> 1. PSY201H5/ BIO360H5/ ECO220Y5/227Y5/ SOC350H5/ STA218H5/220H5 2. 2.5 credits from the following courses: 0.5 credit must be taken from each group. <ol style="list-style-type: none"> 1. Biological Bases of Behaviour: PSY252H5, 290H5, 295H5 2. Perception/Cognition/Communication: PSY270H5, 274H5, 280H5 3. Social/Personality/Abnormal: PSY220H5, 230H5, 240H5 4. Developmental: PSY210H5, 213H5 3. 1.5 credits from the following courses: 0.5 credit must be taken from each group: <ol style="list-style-type: none"> 1. Biological Bases of Behaviour: PSY318H5, 346H5, 351H5, 353H5, 354H5, 355H5, 362H5, 372H5, 393H5, 395H5, 397H5, 398H5; BIO304H5, 310H5, 318Y5, 328H5 2. Perception/Cognition/Communication: PSY312H5, 315H5, 316H5, 331H5, 351H5, 360H5, 362H5, 371H5, 372H5, 374H5, 376H5, 384H5, 385H5, 387H5, 393H5, 397H5; CCT316H5, 326H5, 373H5 3. Developmental/Abnormal/Social/Personality: PSY310H5, 311H5, 312H5, 315H5, 316H5, 318H5, 320H5, 321H5, 324H5, 325H5, 327H5, 328H5, 331H5, 333H5, 340H5, 341H5, 343H5, 344H5, 345H5, 346H5, 353H5; CCT316H5, 326H5 4. 1.0 additional credit in Psychology. At least 0.5 must be at the 300/400 level
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After:	Higher Years	<ol style="list-style-type: none"> 1. PSY201H5/ BIO360H5/ ECO220Y5/227Y5/ SOC350H5/ STA218H5/219H5/220H5 2. 2.5 credits from the following courses: 0.5 credit must be taken from each group. <ol style="list-style-type: none"> 1. Biological Bases of Behaviour: PSY252H5, 290H5, 295H5
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	<p>2. Perception/Cognition/Communication: PSY270H5, 274H5, 280H5</p> <p>3. Social/Personality/Abnormal: PSY220H5, 230H5, 240H5</p> <p>4. Developmental: PSY210H5, 213H5</p> <p>3. 1.5 credits from the following courses: 0.5 credit must be taken from each group:</p> <p>1. Biological Bases of Behaviour: PSY318H5, 346H5, 351H5, 353H5, 354H5, 355H5, 362H5, 372H5, 393H5, 395H5, 397H5, 398H5; BIO304H5, 310H5, 318Y5, 328H5</p> <p>2. Perception/Cognition/Communication: PSY312H5, 315H5, 316H5, 331H5, 351H5, 360H5, 362H5, 371H5, 372H5, 374H5, 376H5, 384H5, 385H5, 387H5, 393H5, 397H5; CCT316H5, 326H5, 373H5</p> <p>3. Developmental/Abnormal/Social/Personality: PSY310H5, 311H5, 312H5, 315H5, 316H5, 318H5, 320H5, 321H5, 324H5, 325H5, 327H5, 328H5, 331H5, 333H5, 340H5, 341H5, 343H5, 344H5, 345H5, 346H5, 353H5; CCT316H5, 326H5</p> <p>4. 1.0 additional credit in Psychology. At least 0.5 must be at the 300/400 level</p>
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Program #3 ERMAJ1376 Chemistry (Sci)

Rationale for change: Updated course designations

Before: Limited Enrolment: Enrolment in the Chemistry Major Program is based on completion of 4.0 credits including CHM140Y5 (minimum grade of 60%) and MAT132Y5/134Y5/135Y5/138Y5.

Notes:

1. MAT132Y5/134Y5/135Y5/138Y5 prerequisite is required for most 200 level CHM courses.
2. For a balanced training in Chemistry, students should take CHM311H5, 331H5/ 333H5, 341H5/345H5, JCP321H5.

First Year	CHM140Y5; MAT132Y5/134Y5/135Y5/137Y5/138Y5
Higher Years	<ol style="list-style-type: none"> 1. CHM211H5, 221H5, 231H5, 240Y5/(241H5, 261H5)/(242H5, 243H5), 371H5/391H5/393H5 2. 3.0 additional 300/400 level CHM/JCP credits.

After: Limited Enrolment: Enrolment in the Chemistry Major Program is based on completion of 4.0 credits including CHM140Y5 (minimum grade of 60%) and MAT134Y5/135Y5/137Y5.

Notes:

1. MAT134Y5/135Y5/137Y5 prerequisite is required for most 200 level CHM/JCP courses.
2. For a balanced training in Chemistry, students should take CHM311H5, 331H5/333H5, 341H5/345H5, JCP321H5.

Year 1	CHM140Y5; MAT134Y5/135Y5/137Y5
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Year 2	CHM211H5, 231H5, 242H5, 243H5; JCP221H5
Years 3 & 4	CHM371H5/391H5/393H5; 3.0 additional 300/400 level CHM/JCP credits.

Program #4 ERMAJ1540 Statistics, Applied (Science)

Rationale for change: Program Content: The courses we offer and their content have undergone some changes in the last several years. The revised content of this program more accurately reflects our course offerings, and recent students in the major have been advised to take this or a very similar course load. Thus, the revised program offerings better reflect what the program graduates of the last several years have actually been taking. Program requirements: The Mathematics and Computer Science Major programs already have similar entry requirements. In the experience of the department, these requirements are essential to ensure that students can succeed in our higher-level courses. Based on the academic records of recent graduates, we do not expect the number of graduates to be affected. Formalizing the program requirements will increase advising quality for new students and decrease the number of students who find themselves nprepared for the second or third year load. Over time, this should lead to an increase of the number of the students who successfully complete the program.

Before: Limited Enrolment:
7.0 credits are required.

1. MAT134Y5/ 135Y5/ 137Y5, 232H5, 223H5;
2. CSC108H5
3. STA(257H5, 258H5)/ ECO227Y5, STA261H5, 331H5, 332H5
4. 2.0 additional credits (including at least 1.0 credit at the 300/400 level) in STA, ACT or from CSC302H5/331H5, 350H5, 354H5, 411H5; MAT242H5*, 252H5*, 311H5, 334H5*, 344H5, 368H5, 378H5, 438H5; BIO360H5**, 361H5**, PSY201H5**, 202H5**, SOC350H5**, 351H5**

Notes: *Optional in the program, but highly recommended for graduate level study in Statistics. **To receive credit for this course, it must be taken prior to STA257H5. *Students enrolled in this program may participate in the PEY program. For more information visit www.pey.utoronto.ca*

After: Limited Enrolment: Enrolment in the Major program is limited to students with a minimum of 4.0 courses including at least MAT223H5; 60% in STA107H5; and MAT137Y5 or 60% in MAT233H5 or 60% in MAT134Y5/135Y5.
7.0 credits are required.

Notes:

1. MAT133Y5 is accepted if the student also completes MAT233H5 (in which case MAT232 is not required).
2. ECO220Y5 cannot be substituted for STA257H5 and/or STA258H5 and/or STA261H5.
3. Students enrolled in this program may participate in the PEY program. For more information visit www.pey.utoronto.ca

First Year	CSC108H5; MAT102H5, 134Y5/135Y5/137Y5, 223H5; STA107H5
Second Year	MAT232H5/233H5; STA257H5, 258H5, 261H5
Higher Years	STA331H5, 332H5; 1.5 additional credits from STA219H5, 312H5/313H5, 322H5/304H5/304H1, 348H5, 413H5, 431H5, 437H5, 442H5, 457H5

Program #5 ERMAJ1883 Exceptionality in Human Learning (Science)

Rationale for change: Annual update of BIO courses based upon changes made in that department in the previous year. New Statistics course (STA219H5) is included as program option as content is similar to the rest of the courses on this list.

Before:

Higher Years	<ol style="list-style-type: none"> 1. PSY201H5/ BIO360H5/ ECO220Y5/227Y5/ SOC350H5/ STA218H5/220H5/ 2. PSY210H5, 213H5 3. 2.5 credits from the following: PSY310H5, 311H5, 312H5, 315H5, 316H5, 318H5, 319H5, 321H5, 325H5, 331H5, 333H5, 340H5, 341H5, 343H5, 344H5, 345H5, 346H5, 353H5, 374H5, 376H5, 384H5, 385H5, 393H5 4. 1.0 additional credit from the following: BIO204H5, 205H5, 206H5, 207H5, 210H5, 215H5, 304H5, 310H5, 315H5, 341H5, 370Y5, 371H5, 372H5, 380H5, 407H5, 443H5, 452H5, 477H5; ANT203Y5, 331H5, 332H5, 334H5, 339Y5, PSL201Y1
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After:

Higher Years	<ol style="list-style-type: none"> 1. PSY201H5/ BIO360H5/ ECO220Y5/227Y5/ SOC350H5/ STA218H5/219H5/220H5/ 2. PSY210H5, 213H5 3. 2.5 credits from the following: PSY310H5, 311H5, 312H5, 315H5, 316H5, 318H5, 319H5, 321H5, 325H5, 331H5, 333H5, 340H5, 341H5, 343H5, 344H5, 345H5, 346H5, 353H5, 374H5, 376H5, 384H5, 385H5, 393H5 4. 1.0 additional credit from the following: BIO204H5, 205H5, 206H5, 207H5, 210Y5, 215H5, 304H5, 315H5, 341H5, 370Y5, 371H5, 372H5, 380H5, 403H5, 407H5, 443H5, 477H5; ANT203Y5, 331H5, 332H5, 334H5, 339Y5; PSL201Y1
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Program #6 ERMAJ1944 Physics (Science)

Rationale for change: Updating course designations.

Before: Reorganization and broadening of course options to give students greater flexibility; addition of CHM140Y5 so that physics majors have better preparation to take several JCP courses now offered.

Year 1	PHY135Y5 (minimum 60%); CHM140Y5; MAT134Y5/135Y5/137Y5
Year 2	PHY242H5, 241H5, 245H5, 247H5 0.5 credit from: PHY237H5, 335H5, CHM221H5, MAT(212H5/242H5), 232H5
Years 3 & 4	PHY324H5; JCP321H5 At least 1.5 credits from: PHY331H5, 332H5, 341H5, 399Y5, 473H5, 489Y5; JCP322H5, MAT311H5, JCP410H5/JCP422H5/SCI498H5

After:

Year 1	PHY135Y5 (minimum 60%); CHM140Y5; MAT135Y5/137Y5
Year 2	PHY241H5, 242H5, 245H5, 247H5 0.5 credit from: PHY237H5; JCP221H5; MAT232H5, 242H5
Years 3 & 4	PHY324H5; JCP321H5 At least 1.5 credits from: PHY331H5, 332H5, 341H5, 399Y5/473H5/489Y5; JCP322H5, MAT311H5, JCP410H5/JCP422H5/SCI498H5

Program #7 ERMAJ2511 Mathematical Sciences (Science)

Rationale for change: The notes about CSC263 and CSC310 refer to a previous version of the major and are no longer relevant.

Before: **Note:**

1. Students who have the required prerequisites may take CSC236H5 and count it in item #1 of "Higher Years." Similarly, CSC310H5 may be counted for item #3 in "Higher Years".
2. Students enrolled in this program may participate in the PEY program. For more information visit www.pey.utoronto.ca

After: **Note:** Students enrolled in this program may participate in the PEY program. For more information visit www.pey.utoronto.ca

Program #8 ERMIN1160 Psychology (Science)

Rationale for change: New Statistics course (STA219H5) is included as program option as content is similar to the rest of the courses on this list.

Before:

Higher Years	<ol style="list-style-type: none">1. PSY201H5/ BIO360H5/ ECO220Y5/227Y5/ SOC350H5/ STA218H5/ 220H52. 1.5 credits from the following courses: 0.5 credit must be taken from each group:<ol style="list-style-type: none">1. Biological Bases of Behaviour: PSY252H5, 290H5, 295H52. Perception/Cognition/Communication: PSY270H5, 274H5, 280H53. Developmental/Abnormal/ Social/Personality: PSY210H5, 213H5, 220H5, 230H5, 240H53. 1.0 credit in PSY at the 300 level. Students may take one or more of the following courses instead: CCT316H5, 326H5, 371H5, 373H5, 379H5
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After:

Higher Years	<ol style="list-style-type: none">1. PSY201H5/ BIO360H5/ ECO220Y5/227Y5/ SOC350H5/ STA218H5/219H5/220H52. 1.5 credits from the following courses: 0.5 credit must be taken from each group:<ol style="list-style-type: none">1. Biological Bases of Behaviour: PSY252H5, 290H5, 295H52. Perception/Cognition/Communication: PSY270H5, 274H5, 280H53. Developmental/Abnormal/ Social/Personality: PSY210H5, 213H5, 220H5, 230H5, 240H53. 1.0 credit in PSY at the 300 level. Students may take one or more of the following courses instead: CCT316H5, 326H5, 371H5, 373H5, 379H5
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Program #9 ERMIN1376 Chemistry (Sci)

Rationale for change: Update course designations

Before: Limited Enrolment: Enrolment in the Chemistry Minor Program is based on completion of 4.0 credits including CHM140Y5 (minimum grade of 60%) and MAT132Y5/134Y5/135Y5/138Y5
Note: MAT132Y5/134Y5/135Y5/138Y5 prerequisite is required for most 200 level CHM courses.

First Year	CHM140Y5
Higher Years	3.0 CHM/JCP credits, at least 1.0 of which must be at the 300/400 level.

After:

Limited Enrolment: Enrolment in the Chemistry Minor Program is based on completion of 4.0 credits including CHM140Y5 (minimum grade of 60%) and MAT134Y5/135Y5/137Y5

Note: MAT134Y5/135Y5/137Y5 prerequisite is required for most 200 level CHM/JCP courses. Students without pre- and co-requisites or written permission of the instructor can be de-registered from courses at any time.

Year 1	CHM140Y5
Years 2, 3 & 4	3.0 CHM/JCP credits, at least 1.0 of which must be at the 300/400 level.

Program #10 ERMIN1540 Statistics, Applied (Science)

Rationale for change:

Program Content: The courses we offer and their content have undergone some changes in the last several years. The revised content of this program more accurately reflects our course offerings, and recent students in the minor have been advised to take this or a very similar course load. Thus, the revised program offerings better reflect what the program graduates of the last several years have actually been taking.

Before:

4.0 credits are required.

1. MAT134Y5/ 135Y5/ 137Y5*
2. STA(248H5/258H5, 257H5)/ ECO227Y5, STA261H5
3. 1.5 additional credits, of which at least 1.0 credits must be at the 300+ level. At least 0.5 of the 300+ level credits must be in STA. The remaining credits may be from STA, ACT, or any of the following: CSC321H5, 354H5, 411H5; ECO327Y5; MAT242H5**, 252H5**, 311H5, 334H5**, 344H5, 368H5, 378H5, 438H5; BIO360H5***, 361H5***, PSY201H5***, 202H5***, SOC350H5***, 351H5***

Notes: * MAT133Y5 is accepted if the student also completes MAT233H5. **Optional in the program, but highly recommended for graduate level study in Statistics. ***To receive credit for this course, it must be taken prior to STA257H5.

After:

4.0 credits are required.

Notes:

1. Several courses in this program are excluded by STA257H5. To obtain credit, they must be taken prior to STA257H5.
2. Please note that a number of courses in this program have MAT prerequisites.
3. ECO220Y5 cannot be substituted for STA257H5 and/or STA258H5 and/or STA261H5.

First Year	MAT223H5
Second Year	MAT232H5/233H5; STA257H5,258H5; (STA220H5, 221H5)/(PSY201H5, 202H5)/(BIO360H5, 361H5)/(SOC350H5, 351H5)/ECO220Y5/ECO227Y5/(STA331H5,332H5)
Higher Year	1.0 additional credits from any STA course except STA107H5 or STA218H5 of which at least 0.5 credits must be at 300/400 level.

Program #11 ERMIN1944 Physics (Science)

Rationale for change: Updating course designations
Before: Reorganization and broadening of courses options to give students greater flexibility

Year 2	PHY241H5, 242H5, 245H5, 237H5/247H5
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After:

Year 2	PHY241H5, 242H5, 247H5, 237H5/245H5
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Program #12 ERSPE1020 Ecology and Evolution

Rationale for change: Removal of some courses from the 'Third and Fourth years' section is to reflect the deletion of courses that are no longer offered in the Department.

Before:

Third and Fourth years	<ol style="list-style-type: none"> 1. BIO313H5 2. BIO360H5 3. 1.0 credit from courses in organismal biology: BIO319H5, 325H5, 334H5/338H5, 335H5, 354H5, 356H5, 370Y5 4. 0.5 credit from field courses: BIO301H5, 302H5*, 316H5, other OUPFB** Field Courses (P.I.) 5. 2.5 credits from core ecology/evolutionary biology courses: BIO311H5, 329H5, 330H5, 333H5*, 339H5*, 341H5, 361H5, 373H5, 406H5, 442H5, 443H5, 464H5, JBG312H5 6. 1.5 credits from other biology courses: BIO215H5, 310H5, 312H5, 318Y5, 371H5, 372H5, 407H5, 409H5, 410H5, 434H5, 481Y5 7. 1.0 credit from related courses from other departments: BIO314H5; MAT212H5, 222H5, 232H5; STA302H5, 322H5; GGR227H5, 278H5 (formerly GGR261), GGR305H5, 307H5, 309H5, 311H5, or from courses listed in #4, #5 and #6 <p>* Offered in alternate years</p> <p>** Ontario Universities Program in Field Biology</p>
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After:

Third and Fourth years	<ol style="list-style-type: none"> 1. BIO313H5 2. BIO360H5 3. 1.0 credit from courses in organismal biology: BIO325H5, 338H5, 335H5, 354H5, 356H5, 370Y5 4. 0.5 credit from field courses: BIO316H5, other OUPFB** Field Courses (P.I.) 5. 2.5 credits from core ecology/evolutionary biology courses: BIO311H5, 329H5, 330H5, 333H5*, 339H5*, 341H5, 361H5, 373H5, 406H5, 442H5, 443H5, 464H5, JBG312H5 6. 1.5 credits from other biology courses: BIO215H5, 310H5, 312H5, 318Y5, 371H5, 372H5, 407H5, 409H5, 410H5,
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	<p>434H5, 481Y5</p> <p>7. 1.0 credit from related courses from other departments: BIO314H5; MAT212H5, 222H5, 232H5; STA302H5, 322H5; GGR227H5, 278H5 (formerly GGR261), GGR305H5, 307H5, 309H5, 311H5, or from courses listed in #4, #5 and #6</p> <p>* Offered in alternate years</p> <p>** Ontario Universities Program in Field Biology</p>
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Program #13 ERSPE1038 Information Security

Rationale for change: The program is being revised to remove math courses of interest only to this specialist and to increase enrollment in math courses required in the MAT major and specialist. MAT442H5 is made redundant by changes to the content of MAT 302H5; CSC490H5 is added to broaden the experience and marketability of the graduates; MAT315H5 is removed because the relevant material will be given in MAT302H5.

Before: Within an Honours degree, 14.5 credits are required.

Third Year	CSC343H5, 347H5, 363H5, 369H5, 373H5; MAT301H5, 302H5, 315H5
Third and Fourth Years	CSC458H5; two of (CSC422H5, 423H5, 427H5; MAT442H5); three half courses from any 300/400 level U of T Mississauga CSC courses (except for CSC492H5 and CSC493H5).

After: Within an Honours degree, 14 credits are required.

Third Year	CSC343H5, 347H5, 363H5, 369H5, 373H5; MAT301H5, 302H5
Third and Fourth Years	CSC458H5; two of (CSC422H5, 423H5, 427H5, 490H5); three half courses from any 300/400 level U of T Mississauga CSC courses, except for CSC492H5 and CSC493H5

Program #14 ERSPE1118 Biotechnology (Science)

Rationale for change: We have removed STA220H5 from the curriculum for this program to remain in-line with our other biology specialist programs, none of which allow STA220H5 as a substitute/ equivalent for the BIO360H5 requirement (except under extenuating circumstances). The change from 6.0 to 7.0 credits at the 300/400 level corrects a clerical error in the addition of the number of required 300 and 400 level credits for this program (as outlined in detail in the curriculum breakdown for the program). Removal of some courses from the 'Final Notes' section is to reflect the deletion of courses that are no longer offered in the Department.

Before: Within an Honours degree, 15.0 credits are required, including at least 6.0 at the 300/400 level, of which 1.5 must be at the 400 level.

*MAT134Y5 - Calculus for Life Sciences is highly recommended.

It is recommended that students in this program consider taking a research project or internship course in either Biology (BIO400Y5/481Y5) or Chemistry (CHM489Y5). Other 4th year courses directly relevant to this program are BIO443H5, 477H5, 478H5, CHM414H5 and CHM462H5.

First Year	BIO152H5, 153H5; CHM140Y5; MAT132Y5/134Y5*/135Y5/137Y5; MGM101H5, 102H5
Third and Fourth Years	

	<ol style="list-style-type: none"> BIO314H5, 315H5, 360H5/STA220H5, 370Y5, 372H5, 374H5; CHM311H5, 361H5; JBC472H5 1.0 credit from: BIO304H5, 310H5, 312H5, 341H5, 380H5, 409H5; CHM333H5 (note: CHM231H5 is prerequisite for this course), CHM341H5, 345H5, 347H5, 362H5, 371H5 1.0 credit from CHM/BIO courses at the 400 level.
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After: Within an Honours degree, 15.0 credits are required, including at least 7.0 at the 300/400 level, of which 1.5 must be at the 400 level.

*MAT134Y5 - Calculus for Life Sciences is highly recommended.

**Please note that while MGM101H and 102H are listed as first year courses, students cannot enroll in these courses until they are admitted into the Specialist Program and therefore will be taking these courses in their 2nd, 3rd or 4th years of study.

NOTE: No substitute statistics course will be allowed for BIO360H5.

It is recommended that students in this program consider taking a research project or internship course in either Biology (BIO400Y5/481Y5) or Chemistry (CHM489Y5). Other 4th year courses directly relevant to this program are BIO443H5, 477H5, CHM414H5 and CHM462H5.

First Year	BIO152H5, 153H5; CHM140Y5; MAT132Y5/134Y5*/135Y5/137Y5; MGM101H5**, 102H5**
Third and Fourth Years	<ol style="list-style-type: none"> BIO314H5, 315H5, 360H5, 370Y5, 372H5, 374H5; CHM311H5, 361H5; JBC472H5 1.0 credit from: BIO304H5, 310H5, 312H5, 341H5, 380H5, 409H5; CHM333H5 (note: CHM231H5 is prerequisite for this course), CHM341H5, 345H5, 347H5, 362H5, 371H5 1.0 credit from CHM/BIO courses at the 400 level.

Program #15 ERSPE1237 Molecular Biology (Science)

Rationale for change: Changes in the curriculum for this program reflect 1) the addition of the Department's new BIO374H5 (Biotechnology and Society); 2) the removal/ deletion of the old course BIO478H5 from the 2010-2011 Academic Calendar; and 3) changes in the designation of the course offerings at the St. George campus.

Before:

Third Year	BIO314H5, 315H5, 360H5, 370Y5, 372H5; CHM361H5, 362H5, 371H5; plus 0.5 of BIO304H5, 310H5, 341H5, 380H5; CHM347H5; PHY335H5; BCH335H1, 340H1
Fourth Year	BIO477H5/ 478H5* plus 1.0 of: BIO411H5, 443H5, 452H5, 481Y5; BCH425H1, 426H1, 440H1; CHM462H5, 489Y5; JBC472H5, MGY420H1, 425H1, 428H1, 432H1, 445H1, 451H1, 452H1, 460H1, 470H1, 485H1 * In the event that BIO477H5 or 478H5 is not offered during the 4th year of student's studies, student must take 1.5 credits from the Fourth Year list above. In such a year, BIO472H1/BCH441H1 may be taken as 0.5 of the optional credit.

After:

Third Year	BIO314H5, 315H5, 360H5, 370Y5, 372H5; CHM361H5, 362H5, 371H5, 374H5; plus 0.5 of BIO304H5, 310H5, 341H5, 380H5; CHM347H5; PHY335H5; BCH335H1, 340H1
Fourth Year	BIO477H5* plus 1.0 of: BIO407H5, BIO411H5, 443H5, 481Y5; BCH441H1; CHM462H5, 489Y5; JBC472H5, CSB435H1, 450H1, 459H1, 472H1, 473H1, 474H1, 475H1; MGY425H1, 428H1, 432H1, 445H1, 451H1, 452H1, 460H1, 470H1, MIJ485H1 * In the event that BIO477H5 is not offered during the 4th year of student's studies, the student must take 1.5 credits from the Fourth Year list above. In such a year, MGY420H1 may be taken.

Program #16 ERSPE1376 Chemistry (Sci)

Rationale for change: To update course designations.

Before: Limited Enrolment: Enrolment in this Program is restricted. Selection will be based on completion of 9.0 credits including CHM140Y5 (minimum grade of 65%); MAT132Y5/134Y5/135Y5/138Y5 (minimum grade of 65%); 2.0 FCE of 200 level CHM (minimum average grade of 70%); and a minimum CGPA of 2.5.

Notes:

1. **Students who are in ETP@UTM may substitute (CHM485H5 + SCI499H5) in place of CHM489Y5Y.**
2. Additional 400 level CHM courses include CHM414H5, 416H5, 442H5, 462H5, 485H5 and JCP410H5, 422H5 plus the selection of CHM400 level courses at St. George.
3. Additional 300 level CHM courses available include CHM333H5, 347H5, 362H5; JCP322H5
4. Students are strongly advised to consult the Program Advisor regarding the program of study.
5. MAT132Y5/134Y5/135Y5/138Y5 prerequisite is required for most 200 level CHM courses.

First Year	CHM140Y5; MAT132Y5/134Y5/135Y5/137Y5/138Y5; PHY135Y5/137Y5
Higher Years	1. CHM211H5, 221H5, 231H5, 240Y5/(241H5, 261H5)/(242H5, 243H5); MAT212H5/232H5 2. CHM311H5, 331H5, 341H5/345H5, 361H5, 391H5, 393H5; JCP321H5 3. CHM489Y5; 1.5 400 level CHM/JCP courses, 1.0 300/400 level CHM or other science course(s).

After: Limited Enrolment: Enrolment in this Program is restricted. Selection will be based on completion of 4.0 credits including CHM140Y5 (minimum grade of 65%); MAT134Y5/135Y5/137Y5 (minimum grade of 65%); and a minimum CGPA of 2.5.

Notes:

1. **Students who are in ETP@UTM may substitute (CHM485H5 + SCI499H5) in place of CHM489Y5Y.**
2. Additional 300 level CHM/JCP courses available include CHM333H5, 347H5, 362H5; JCP322H5
3. Additional 400 level CHM/JCP courses include CHM414H5, 416H5, 442H5, 444H5, 462H5, 463H5, 485H5 and JCP410H5, 422H5 plus the selection of CHM400 level courses at St. George.
4. Students are strongly advised to consult the Program Advisor regarding the program of study.
5. MAT134Y5/135Y5/137Y5 prerequisite is required for most 200 level CHM courses.

Year 1	CHM140Y5; MAT134Y5/135Y5/137Y5; PHY135Y5
Year 2	CHM211H5, 231H5, 242H5, 243H5; JCP221H5; MAT212H5/232H5
Year 3	CHM311H5, 331H5, 341H5/345H5, 361H5, 391H5, 393H5; JCP321H5
Year 4	CHM489Y5; 1.5 400 level CHM/JCP courses, 1.0 300/400 level CHM/JCP or other science course(s).

Program #17 ERSPE1540 Statistics, Applied (Science)

Rationale for change: Program Content: The courses we offer and their content have undergone some changes in the last several years. The revised content of this program more accurately reflects our course offerings, and recent students in the specialist have been advised to take this or a very similar course load. Thus, the revised program offerings better reflect what the program graduates of the last several years have actually been taking. Program requirements: The Mathematics and Computer Science Specialist programs already have similar entry requirements. In the experience of the department, these requirements are essential to ensure that students can succeed in our higher-level courses. Based on the academic records of recent graduates, we do not expect the number of graduates to be affected. Formalizing the program requirements will increase advising quality for new students and decrease the number of students who find themselves unprepared for the second or third year load. Over time, this should lead to an increase of the number of the students who successfully complete the program.

Before: Limited Enrolment:
Within an Honours degree, 10.0 credits are required.

1. MAT102H5, 134Y5/135Y5/137Y5, 232H5, 223H5, 212H5/242H5;
2. CSC108H5
3. STA(257H5, 258H5)/ECO227Y5, STA261H5, 331H5, 332H5
4. Two of STA413H5, 431H5, 437H5, 442H5, 457H5
5. 3.0 additional credits (including at least 2.0 credits at the 300/400 level) in STA, ACT or from CSC321H5, 354H5, 411H5; ECO327Y5, MAT252H5*, 311H5, 334H5*, 344H5, 368H5, 378H5, 438H5, BIO360H5**, 361H5**, PSY201H5**, 202H5**, SOC350H5**, 351H5**

Notes: *Optional in the program, but highly recommended for graduate level study in Statistics. **To receive credit for this course, it must be taken prior to STA257H5. *Students enrolled in this program may participate in the PEY program. For more information visit www.pey.utoronto.ca*

After: Limited Enrolment: Enrolment in the Specialist program is limited to students with a minimum of 4.0 courses to include at least 60% in MAT223H5; 65% in STA107H5; and 60% in MAT137Y5 or 60% in MAT233H5 or 65% in MAT134Y5/135Y5.
Within an Honours degree, 12.0 credits are required.

- Notes:
1. MAT133Y5 is accepted if the student also completes MAT233H5 (in which case MAT232 is not required).
 2. ECO220Y5 cannot be substituted for STA257H5 and/or STA258H5 and/or STA261H5.
 3. Students enrolled in this program may participate in the PEY program. For more information visit www.pey.utoronto.ca

First Year	CSC108H5; MAT102H5, 134Y5/135Y5/137Y5, 223H5; STA107H5
Second Year	MAT232H5/233H5, 212H5/242H5, 252H5/311H5; STA257H5, 258H5, 261H5
Third Year	MAT378H5; STA322H5/304H5/304H1, 331H5, 332H5, 348H5
Third and Fourth Years	STA413H5; three of STA312H5/313H5, 413H5, 431H5, 437H5, 442H5, 457H5; 1.5 credits from (CSC411H5; MAT332H5, 334H5, 344H5, 368H5; any STA courses except STA218H5, 220H5, 221H5)

Program #18 ERSPE1883 Exceptionality in Human Learning (Science)

Rationale for change: Annual update of breadth courses based upon changes made in other departments in the previous year. New Statistics course (STA219H5) is included as program option as content is similar to the rest of the courses on this list.

Before:

Second Year	<ol style="list-style-type: none"> 1. PSY201H5/ BIO360H5/ ECO220Y5/227Y5/ SOC350H5/ STA218H5/220H5/ 2. PSY210H5, 213H5 3. 0.5 credit from the following: PSY202H5 (or equivalent), 240H5, 270H5, 274H5, 280H5, 290H5, 295H5
Second and Higher Years	<ol style="list-style-type: none"> 1. 3.0 credits from the following: PSY310H5, 311H5, 312H5, 315H5, 316H5, 318H5, 319H5, 321H5, 325H5, 331H5, 333H5, 340H5, 341H5, 343H5, 344H5, 346H5, 353H5, 374H5, 376H5, 384H5, 385H5, 393H5 2. PSY442Y5 and at least 0.5 credit from the following: PSY400Y5, 403H5, 404H5, 405H5, 406H5, 410H5, 415H5, 440H5, 474H5, 495H5 3. 2.0 credits from one of the following lists: <ol style="list-style-type: none"> 1. ANT203Y5, 204Y5, 206H5, 241Y5, 304H5, 331H5, 332H5, 333H5, 334H5, 335H5, 339Y5, 362H5, 364H5, 433H5, 434H5, 460H5 2. SOC209H5, 211H5, 216H5, 244H5, 252H5, 302H5, 305H5, 307H5, 310H5, 319Y5, 323H5, 332H5, 333H5, 348H5, 356H5, 363H5, 365H5, 368H5, 371H5, 455H5, 456H5 3. BIO204H5, 205H5, 206H5, 207H5, 210H5, 215H5, 304H5, 310H5, 315H5, 341H5, 370Y5, 371H5, 372H5, 380H5, 407H5, 443H5, 452H5, 477H5; ANT203Y5, 331H5, 332H5, 334H5, 339Y5, PSL201Y1 <p>NOTE: Students who took SOC100H5 must take 2.5 credits from List 3(b)</p> <ol style="list-style-type: none"> 4. 2.5 additional credits to be selected from the following (no more than 1.0 credit from any one discipline): <p>ANT Any course in 3(a) not counted previously</p> <p>SOC Any course in 3(b) not counted previously</p> <p>BIO Any course in 3(c) not counted previously</p> <p>CCT CCT326H5</p> <p>CHM CHM242H5, 243H5, 341H5, 345H5, 347H5, 361H5, 362H5, 371H5</p> <p>ENG ENG234H5</p> <p>FGI FGI225Y5</p> <p>HIS HIS308H5, 326Y5, 338H5</p> <p>LIN LIN100Y5, 200H5, 256H5, 358H5, 372H5</p> <p>JAL JAL253H5, 355H5</p> <p>PHL PHL243H5, 244H5, 252H5, 255H5, 267H5, 271H5, 272H5, 274H5, 277Y5, 282H5, 283H5, 290H5, 350H5, 355H5, 375H5</p> <p>RLG RLG224H5, 309H5, 314H5</p> <p>SCI SCI398Y5, 499H5</p>

After:

Second Year	<ol style="list-style-type: none"> 1. PSY201H5/ BIO360H5/ ECO220Y5/227Y5/ SOC350H5/ STA218H5/219H5/220H5/ 2. PSY210H5, 213H5 3. 0.5 credit from the following: PSY202H5 (or equivalent), 240H5, 270H5, 274H5, 280H5, 290H5, 295H5
Second and Higher Years	<ol style="list-style-type: none"> 1. 3.0 credits from the following: PSY310H5, 311H5, 312H5, 315H5, 316H5, 318H5, 319H5, 321H5, 325H5, 331H5, 333H5, 340H5, 341H5, 343H5, 344H5, 346H5, 353H5, 374H5, 376H5, 384H5, 385H5, 393H5 2. PSY442Y5 and at least 0.5 credit from the following: PSY400Y5, 403H5, 404H5, 405H5, 406H5, 410H5, 415H5, 440H5, 474H5, 495H5 3. 2.0 credits from one of the following lists: <ol style="list-style-type: none"> 1. ANT203Y5, 204Y5, 205H5, 206Y5, 241Y5, 304H5, 306H5, 322H5, 331H5, 332H5, 333H5, 334H5, 335H5, 339Y5, 362H5, 364H5, 401H5, 433H5, 434H5, 460H5, 461H5 2. SOC209H5, 211H5, 216H5, 244H5, 252H5, 263H5, 284H5, 302H5, 307H5, 310H5, 316H5, 319Y5, 323H5, 332H5, 333H5, 348H5, 356H5, 365H5, 368H5, 371H5, 375H5, 455H5, 456H5 3. BIO204H5, 205H5, 206H5, 207H5, 210Y5, 215H5, 304H5, 315H5, 341H5, 370Y5, 371H5, 372H5, 380H5, 403H5, 407H5, 443H5, 477H5; ANT203Y5, 331H5, 332H5, 334H5, 339Y5; PSL201Y1 <p>NOTE: Students who took SOC100H5 must take 2.5 credits from List 3(b)</p> 4. 2.5 additional credits to be selected from the following (no more than 1.0 credit from any one discipline): <p>ANT Any course in 3(a) not counted previously</p> <p>SOC Any course in 3(b) not counted previously</p> <p>BIO Any course in 3(c) not counted previously</p> <p>CCT CCT326H5</p> <p>CHM CHM242H5, 243H5, 341H5, 345H5, 347H5, 361H5, 362H5, 371H5</p> <p>ENG ENG234H5</p> <p>FGI/FRE FGI225Y5, FRE355H5</p> <p>HIS HIS308H5, 310H5, 326Y5, 338H5</p> <p>LIN LIN100Y5, 200H5, 256H5, 358H5</p> <p>JAL JAL253H5, 355H5</p> <p>PHL PHL243H5, 244H5, 255H5, 267H5, 271H5, 272H5, 274H5, 277Y5, 282H5, 283H5, 290H5, 350H5, 355H5, 375H5, 380H5</p> <p>RLG RLG224H5, 309H5, 314H5</p> <p>SCI SCI395H5, 396H5, 499H5</p> <p>WGS Any course</p>

Program #19 ERSPE1944 Biological Physics Specialist (Science)

Rationale for change: Thermodynamics has been removed from PHY242H5 since it was duplicated by JCP221H5 (formerly CHM221H5) and JCP221H5 has been added to the program requirements. Number of credits required has been increased from 13.5 to 14.0

Before: Limited Enrolment: Enrolment in the program is restricted to students with 70% in PHY135Y and CHM140Y. Within an Honours Degree, 13.5 credits are required.

Year 2	PHY242H5/CHM221H5, PHY241H5, 245H5, 247H5; MAT223H5, 232H5, 242H5; BIO206H5
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After: Limited Enrolment: Enrolment in the program is restricted to students with 70% in PHY135Y. Within an Honours Degree, 14.0 credits are required.

Year 2	PHY241H5, 242H5, 245H5, 247H5; JCP221H5; MAT223H5, 232H5, 242H5; BIO206H5
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Program #20 ERSPE1995 Biological Chemistry (Science)

Rationale for change: Updated course designations

Before: Limited Enrolment: Enrolment in this program is restricted. Selection will be based on completion of 9.0 credits including CHM140Y5 (minimum grade of 65%); MAT132Y5/134Y5/135Y5/138Y5 (minimum grade of 65%); 2.0 FCE of 200 level CHM (minimum average grade of 70%); and a minimum CGPA of 2.5. Completion of BIO152H5, 206H5, 207H5 and 215H5 is recommended.

Notes:

1. Enrolment in CHM371H5 and certain BCH (St. George) courses is limited.
2. Additional 300/400-level CHM courses include CHM311H5, 331H5, 345H5, 391H5, 393H5, 414H5, 416H5, 422H5, 442H5, 461H5, 462H5, 485H5 and JBC472H5 and JCP321H5, 322H5, 410H5, 422H5 at U of T Mississauga plus the 300/400 level CHM/BCH courses at St. George.
3. Students are strongly advised to consult the program advisor regarding their course of study.

Students without pre- and co-requisites or written permission of the instructor can be de-registered from courses at any time.

First Year	BIO152H5; CHM140Y5; MAT132Y5/134Y5/135Y5/137Y5/138Y5; PHY135Y5/137Y5
Higher Years	<ol style="list-style-type: none"> 1. CHM211H5, 221H5, 231H5, 240Y5/(241H5, 261H5)/(242H5, 243H5); BIO206H5, 207H5, 215H5; 0.5 MAT/CSC/STA credit 2. CHM333H5, 341H5/345H5, 347H5, 361H5, 362H5, 371H5; BIO372H5 3. CHM489Y5; 1.0 400 level CHM, JBC, JCP or BCH course(s)

After: Limited Enrolment: Enrolment in this program is restricted. Selection will be based on completion of 4.0 credits including CHM140Y5 (minimum grade of 65%); MAT134Y5/135Y5/137Y5 (minimum grade of 65%); and a minimum CGPA of 2.5. Completion of BIO152H5 is recommended.

Notes:

1. Enrolment in CHM371H5 and certain BCH (St. George) courses is limited.
2. Additional 300/400-level CHM/JCP courses include CHM311H5, 331H5, 391H5, 393H5, 414H5, 416H5, 442H5, 444H5, 462H5, 463H5, 485H5 and JBC472H5 and JCP321H5, 322H5, 410H5, 422H5 at U of T Mississauga plus the 300/400 level CHM/BCH courses at St. George.
3. Students are strongly advised to consult the program advisor regarding their course of study.

Students without pre- and co-requisites or written permission of the instructor can be de-registered from courses at any time.

Year 1	BIO152H5; CHM140Y5; MAT134Y5/135Y5/137Y5; PHY135Y5
Year 2	CHM211H5, 231H5, 242H5, 243H5; JCP221H5; BIO206H5, 207H5, 215H5; 0.5 MAT/CSC/STA credit
Year 3	CHM333H5, 341H5/345H5, 347H5, 361H5, 362H5, 371H5; BIO372H5
Year 4	CHM489Y5; 1.0 400 level CHM, JBC, JCP or BCH course(s)

Program #21 ERSPE2364 Biology (Science)

Rationale for change: Change in description is to reflect a clerical error in the addition of the number of required 300 and 400 level credits for this program. Within the curriculum of the program, a requirement of 6.0 300 and 400 level credits is outlined. As it currently reads, the program description does not explicitly state this. Removal of "except under extenuating circumstances" within note regarding BIO360H5 requirement is to make program requirements more clear to students. Removal of some courses from the 'Final Notes' section is to reflect the deletion of courses that are no longer offered in the Department.

Before: Within an Honours degree, 13.0 credits are required, including at least 5.0 at the 300/400 level, of which 1.0 must be at the 400 level.

It is recommended that students in the specialist program include at least 0.5 credit from each of four of the following groups:

- ◆ **Ecology and Field Biology:** BIO301H5, 302H5, 311H5, 312H5, 313H5, 316H5, 329H5, 330H5, 333H5*, 405H5*, 418H5*, 464H5; JBG312H5; PHY335H5
- ◆ **Biology of Whole Organisms:** BIO319H5, 325H5, 334H5, 335H5, 338H5, 354H5, 356H5
- ◆ **Genetics and Evolution:** BIO341H5, 407H5, 442H5, 443H5*, 464H5
- ◆ **Cell, Molecular and Developmental Biology:** BIO314H5, 315H5, 370Y5, 371H5, 372H5, 380H5, 407H5, 477H5/478H5; CHM361H5, 362H5.
- ◆ **Physiology and Behaviour:** BIO210Y5, 304H5, 310H5, 312H5, 318Y5, 328H5, 409H5, 410H5, 411H5, 418H5*, 434H5; PHY335H5

*MAT134Y5 - Calculus for Life Sciences is highly recommended.

Up to 1.0 credit may be taken from the following biology-related courses: GGR227H5, 305H5, 307H5, 309H5, 311H5; CHM347H5, 361H5, 362H5, 371H5; PHY335Y5; PSY290H5, 355H5, 357H5, 395H5, 397H5; ANT334H5, 336H5, 340H5.

Additional courses: BIO361H5, 481Y5

* Offered in alternate years

Notes:

1. Students wishing to emphasize cell biology, molecular biology, microbiology, physiology or genetics, should take CHM240Y5/(241H5, 261H5)/(242H5, 243H5) in second year. Such students should take MAT132Y5/134Y5/135Y5/137Y5, a prerequisite, in their first year.
2. No substitute statistics course will be allowed for BIO360H5, except under extenuating circumstances.
3. Certain U of T Mississauga Biology courses will be treated as equivalent to corresponding St. George campus courses in satisfying requirements for certain St. George specialist programs related to Biology and Basic Medical Sciences. Students who intend to begin these programs at U of T Mississauga should consult a Biology advisor as early as possible.

After: Within an Honours degree, 13.0 credits are required, including at least 6.0 at the 300/400 level, of which 1.0 must be at the 400 level.

It is recommended that students in the specialist program include at least 0.5 credit from each of four of the following groups:

- ◆ **Ecology and Field Biology:** BIO311H5, 312H5, 313H5, 316H5, 329H5, 330H5, 333H5*, 464H5; JBG312H5; PHY335H5
- ◆ **Biology of Whole Organisms:** 325H5, 335H5, 338H5, 354H5, 356H5
- ◆ **Genetics and Evolution:** BIO341H5, 407H5, 442H5, 443H5*, 464H5
- ◆ **Cell, Molecular and Developmental Biology:** BIO314H5, 315H5, 370Y5, 371H5, 372H5, 380H5, 407H5, 477H5; CHM361H5, 362H5.
- ◆ **Physiology and Behaviour:** BIO210Y5, 304H5, 310H5, 312H5, 318Y5, 328H5, 409H5, 410H5, 411H5, 434H5; PHY335H5

*MAT134Y5 - Calculus for Life Sciences is highly recommended.

Up to 1.0 credit may be taken from the following biology-related courses: GGR227H5, 305H5, 307H5, 309H5, 311H5; CHM347H5, 361H5, 362H5, 371H5; PHY335Y5; PSY290H5, 355H5, 357H5, 395H5, 397H5; ANT334H5, 336H5, 340H5.

Additional courses: BIO361H5, 481Y5

* Offered in alternate years

Notes:

1. Students wishing to emphasize cell biology, molecular biology, microbiology, physiology or genetics, should take CHM240Y5/(241H5, 261H5)/(242H5, 243H5) in second year. Such students should take MAT132Y5/134Y5/135Y5/137Y5, a prerequisite, in their first year.
2. No substitute statistics course will be allowed for BIO360H5.
3. Certain U of T Mississauga Biology courses will be treated as equivalent to corresponding St. George campus courses in satisfying requirements for certain St. George specialist programs related to Biology and Basic Medical Sciences. Students who intend to begin these programs at U of T Mississauga should consult a Biology advisor as early as possible.

Program #22 ERSPE2470 Behaviour, Genetics, and Neurobiology (Science)

Rationale for change: Correction of error of omission. PSY354H5 concerns the Biopsychology of sex and as such is suitable for the behavioral requirement for this program.

Before:

Second Year	<p>1. (PSY201H5, 202H5)/(BIO360H5, 361H5) 2. BIO205H5; BIO206H5; BIO207H5; PSY252H5; PSY290H5</p> <p>Second year notes:</p> <ul style="list-style-type: none"> ◇ BIO204H5 (Introduction to Physiology) is required for the several courses in the Neurobiology stream ◇ BIO215H5 (Laboratory in Molecular Biology and Genetics) is required for several courses in the Genetics stream ◇ PSY210H5 (Introduction to Developmental Psychology) is required for several courses in the Behavioural stream <p>Students are encouraged to consider taking these courses depending on their planned course of study.</p>
Third Year	<p>1.0 credit from each of the following three streams:</p> <ol style="list-style-type: none"> 1. Behaviour: BIO318Y5/328H5, PSY316H5, 318H5, 346H5, 351H5, 353H5, 355H5, 360H5, 362H5, 385H5, 393H5, 395H5, 397H5, 398H5,

	<p>399H5</p> <p>2. Genetics: BIO314H5, 315H5, 341H5, 372H5, 407H5, PSY355H5</p> <p>3. Neurobiology: BIO304H5, 309H5, 310H5, 380H5, PSY318H5, 346H5, 385H5, 393H5, 397H5, 399H5</p> <p>Third year note:</p> <p>◊ Students interested in taking PSY400Y5 must take PSY309H5 in third year.</p>
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After:

Second Year	<p>1. (PSY201H5, 202H5)/(BIO360H5, 361H5)</p> <p>2. BIO205H5; BIO206H5; BIO207H5; PSY252H5; PSY290H5</p> <p>Second year notes:</p> <p>◊ BIO204H5 (Introduction to Physiology) is required for several courses in the Neurobiology stream</p> <p>◊ BIO215H5 (Laboratory in Molecular Biology and Genetics) is required for several courses in the Genetics stream</p> <p>◊ PSY210H5 (Introduction to Developmental Psychology) is required for several courses in the Behavioural stream</p> <p>Students are encouraged to consider taking these courses depending on their planned course of study.</p>
Third Year	<p>1.0 credit from each of the following three streams:</p> <p>1. Behaviour: BIO318Y5/328H5, PSY316H5, 318H5, 346H5, 351H5, 353H5, 354H5, 355H5, 360H5, 362H5, 385H5, 393H5, 395H5, 397H5, 398H5, 399H5</p> <p>2. Genetics: BIO314H5, 315H5, 341H5, 372H5, 407H5, PSY355H5</p> <p>3. Neurobiology: BIO304H5, 309H5, 310H5, 380H5, PSY318H5, 346H5, 385H5, 393H5, 397H5, 399H5</p> <p>Third year note:</p> <p>◊ Students interested in taking PSY400Y5 must take PSY309H5 in third year.</p>

New Courses

Course #1 CSC199H5 Computer Science Seminar (SCI)

Description:	Introduction to a topic of current interest in computer science intended for a general audience. Content will vary from year to year.
Prerequisite:	P.I.
Rationale:	A first year seminar course offers a positive introduction to computer science for students on a non-computer science track. It provides an opportunity for the MCS department to attract first-year undergraduates to the program and to provide an introduction to technical literacy within a focused topic area.
No. Hours Instruction:	24S
Offered at St George:	No
Revived Course:	No

Course #2 CSC398H5 Topics in Computer Science (SCI)

Description:	Introduction to a topic of current interest in computer science intended for CSC majors and specialists. Content will vary from year to year.
Prerequisite:	A minimum of 8.0 credits and P.I.
Rationale:	MAT currently holds four numbers for topics courses (MAT388, 478, 488, 498), which gives the department the flexibility to support trial courses or courses offered by visiting instructors. Introducing topics courses to computer science will provide similar flexibility.
No. Hours Instruction:	24L, 12T
Offered at St George:	No
Revived Course:	No

Course #3 CSC399Y5 Research Opportunity Program (SCI)

Description:	This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 399Y course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (299Y, 399Y and 499Y) for more details.
Rationale:	CSC and MAT currently offer a 299 option but no ROP opportunities for later year students. However, in computer science, most 2nd year students will not have sufficient background to be full partners in a research project. The 200-level courses offer a better base, since they introduce several broad computer science domains.
No. Hours Instruction:	
Offered at St George:	No
Revived Course:	No

Course #4 CSC498H5 Topics in Computer Science (SCI)

Description:	Introduction to a topic of current interest in computer science intended for CSC majors and specialists. Content will vary from year to year.
Prerequisite:	A minimum of 8.0 credits and P.I.
Rationale:	MAT currently holds four numbers for topics courses (MAT388, 478, 488, 498), which gives the department the flexibility to support trial courses or courses offered by visiting instructors. Introducing topics courses to computer science will provide similar flexibility.
No. Hours Instruction:	24L, 12T

Offered at St George: No
Revived Course: No

Course #5 JCP221H5 Thermodynamics and Kinetics (SCI)

Description: An introduction to equilibrium thermodynamics with application to ideal and non-ideal systems: covering the concepts of work and heat, the laws of thermodynamics, internal energy, enthalpy and entropy, the chemical potential, states of matter, phase rules and phase diagrams, and chemical equilibria. Kinetics topics include rate laws, both differential and integrated, rate constants, activated complex theory, and temperature effects. [36L, 18P, 12T]

Exclusion: CHM221H5, 220H1, 221H1, 225Y1

Prerequisite: MAT134Y5/135Y5/137Y5; (A mark of 60% or higher in CHM140Y5)/PHY135Y5

Recommended Preparation: Mat212H5/223H5/232H5/242H5. These courses are also prerequisites for JCP321H5

Rationale: Joint Chemistry Physics (JCP) courses cover subject matter common to both chemistry and physics curricula. They are designed to satisfy program requirements simultaneously in both chemistry and physics programs. This permits optimal deployment of teaching resources and, hence, a fuller menu of course offerings. The specific subject of thermodynamics constituted roughly 4/5's of the curriculum of CHM221H5 and 1/3 of PHY242H5. The thermodynamics content of PHY242H5 has been removed (see accompanying information) and physics students will now be permitted to enroll in JCP221H5 and have it count towards their program requirements. The program descriptions for the Biological Physics Specialist, Physics Major and all affected Chemistry programs have been altered correspondingly (see accompanying information). Prerequisites have been updated.

No. Hours

Instruction:

Offered at St George: No

Revived Course: No

Courses - Resource Implications

Course #1 BIO360H5 Biometrics I

Resource implications: There will be no change to the resources/ funding for this course. Current resources will be sufficient to accommodate the changes to format of the course.

Course #2 CSC199H5 Computer Science Seminar

Resource implications: No resource implications. This seminar will be offered as opportunities arise and will replace an elective course that may otherwise have been offered

Course #3 CSC290H5 Communication Skills for Computer Scientists

Resource implications: Change in lecture hours from 36L to 24L, 12T causes no resource implications. The course is already being taught with a tutorial which requires one TA position per 30 students.

Course #4 CSC398H5 Topics in Computer Science

Resource implications: No resource implications. Topics courses will be offered as opportunities arise and will replace an elective course that may otherwise have been offered.

Course #5 CSC399Y5 Research Opportunity Program

Resource implications: No resource implications. ROP is already being offered and does not count in the instructor's course load.

Course #6 CSC498H5 Topics in Computer Science

Resource implications: No resource implications. Topics courses will be offered as opportunities arise and will replace an elective course that may otherwise have been offered.

Course #7 GGR227H5 Ecosystems and Environmental Change

Resource implications: The additional 12 hours per term in this course will be taught by the current faculty instructor. TA resources are still needed, as writing and data analysis will remain a key component of the course and TAs will hold optional tutorial sessions.

Course #8 GGR307H5 Environmental Soil Science

Resource implications: Increasing lab hours from 2 to 3 hrs per week for 9 of the weekly labs will allow these sessions to include several lab exercises (which are too complicated to complete in just 2 hrs) as well as short local field trips (on campus, to Riverwood Conservancy, Creditview Wetland, Rattray Marsh, etc). Currently, students must return to the teaching lab during non-lab hours, which is becoming quite difficult to manage as the course grows. The additional resource requirements are a modest addition or reallocation of TA hours as the length of the practical sessions will increase from 2 to 3hrs.

Course #9 GGR379H5 Field Methods in Physical Geography

Resource implications: This course is taught by faculty members. No extra financial resource is required.

Course #10 GGR406H5 Advanced Biogeochemistry

Resource implications: The additional 12 hours will be taught by the same faculty instructor. No extra resource is required.

Course #11 JCP221H5 Thermodynamics and Kinetics

Resource implications: There are no resource implications

Course #12 MAT392H5 Ideas of Mathematics

Resource implications: Change in lecture hours from 48L to 36L, 12T causes no resource implications. The course is already being taught with a reduced lecture component and tutorial requiring one TA position per 30 students.

Course #13 PHY242H5 Thermal Physics and Fluid Mechanics

Resource implications: None

Deleted Courses

Course #1 BIO301H5 Marine Biology

Rationale: This is an old designation for a course which no longer exists at the UTM campus. The course is now offered through Ecology and Evolutionary Behaviour at St. George under the course code EEB301H1.

Course #2 BIO302H5 Arctic Ecology

Rationale: This field course has not been offered in the last few years. All UofT field courses are now offered/ run through the Ecology and Evolutionary Behaviour Department (EEB) at St George and should have the EEB designation. Also, EEB has advised that there is no longer funding available to offer this course.

Course #3 BIO319H5 Invertebrate Zoology

Rationale: This course was previously only very occasionally taught. Currently, BIO325H5 (Functional Morphology of Animals) covers both vertebrates and invertebrates in its curriculum and is offered annually. We would like to remove BIO319H5 from the calendar and focus more on BIO325H5 instead.

Course #4 BIO334H5 Entomology

Rationale: This course was previously offered in conjunction with BIO338H5 (Forensic Entomology). The course content was the same, but students in BIO334H5 would complete an entomology project while students in BIO338H5 would complete a forensic entomology project. With the increase in enrolment of the Forensic Science program(s) (where BIO338H5 is a requirement), there has been less demand for BIO334H5 and there has been no need to offer both courses together.

Course #5 BIO405H5 Ecology of Communities and Ecosystems

Rationale: When BIO406H5 was introduced, it was to combine the content of BIO418H5 and BIO405H5 (two advanced-level Ecology courses). As BIO406H5 is now offered annually, it is felt that we no longer require BIO405H5.

Course #6 BIO418H5 Behavioural Ecology

Rationale: When BIO406H5 was introduced, it was to combine the content of BIO418H5 and BIO405H5 (two advanced-level Ecology courses). As BIO406H5 is now offered annually, it is felt that we no longer require BIO418H5.

Course #7 BIO478H5 Functional Genomics and Bioinformatics

Rationale: Course material for this course has been worked into BIO477H5. There is no need for both courses.

Course #8 CHM221H5 Introductory Physical Chemistry

Rationale: Not offered starting 2010-2011. Being replaced by JCP221H5 in 2010-2011.

Course #9 MAT438H5 Analysis

Rationale: No longer offered and not relevant to the existing programs.

Course #10 MAT442H5 Algebraic Aspects of Cryptography

Rationale: MAT442 is being folded into the revised MAT302 to create an introductory cryptography course which is attractive to general MAT/CSC/STA statistics instead of just information security specialist students.

Course #11 PHY206H5 The Physics of Everyday Phenomena

Rationale: Lack of resources for teaching this course.

Renumbered Courses

Course #1 STA304H5 Surveys, Sampling and Observational Data

Before: STA322H5

After: STA304H5

Rationale: The course number/title/information has changed at the St George campus, while the content remains the same as before. We are effecting the corresponding change at UTM to keep the course offerings uniform between the campuses and since the new course information better reflects the content.

Courses - Description Changes

Course #1 BIO328H5 Lectures in Animal Behaviour

Before:

After: This is a half-credit (0.5) course that is offered over the full academic year.

Rationale: Change made as per request from Registrar's Office for non-standard courses.

Course #2 BIO360H5 Biometrics I

Before: An introduction to the basic principles and procedures of biological statistics. Topics include the nature of data, effective data presentation, the relationship of samples to populations, probability, sampling theory, descriptive statistics, estimation, comparison of samples, power testing, randomization techniques and analysis of frequencies. Students should combine this course with BIO361H5 for a complete introduction to Biometrics. [24L, 24T]

After: An introduction to the basic principles and procedures of biological statistics. Topics include the nature of data, effective data presentation, the relationship of samples to populations, probability, sampling theory, descriptive statistics, estimation, comparison of samples, power testing, randomization techniques and analysis of frequencies. Students should combine this course with BIO361H5 for a complete introduction to Biometrics. [24L, 12T, 24P]

Rationale: The format for this course has been changed to better accommodate for term tests and more course material now that UTM has moved from a 13-week semester to a 12-week semester. The change will also allow for the instructor to more fully cover the course material.

Course #3 BIO371H5 Microbiology Lectures

Before:

After: This is a half-credit (0.5) course that is offered over the full academic year.

Rationale: Change made as per request from Registrar's Office for non-standard courses.

Course #4 CHM140Y5 The Study of Matter and Its Transformations

Before: Matter and its transformations are studied at both the microscopic and the macroscopic levels. Topics include atomic and molecular structure, intermolecular forces of attraction and the phases of matter, organic chemical reactions and mechanisms, principles of systems at equilibrium, thermodynamics, electrochemistry and kinetics. [72L, 22P, 21T]

After: Matter and its transformations are studied at both the microscopic and the macroscopic levels. Topics include atomic and molecular structure, intermolecular forces of attraction and the phases of matter, organic chemical reactions and mechanisms, principles of systems at equilibrium, thermodynamics, electrochemistry and kinetics. [72L, 36P, 24T]

Rationale: 1. Change the hours to read 72L, 36P, 24T - UNDERGRADUATE LABORATORY RENOVATIONS WILL ALLOW US TO RETURN TO HAVING 3 HOUR LABS AND 2 HOUR TUTORIALS ON ALTERNATE WEEKS. THIS REPRESENTS THE MINIMUM NUMBER OF LABORATORY HOURS RECOMMENDED BY THE CSC PROGRAM ACCREDITATION COMMITTEE.

Course #5 CHM341H5 Organic Chemistry: Mechanism and Structure

Before: Offered in alternate years. Not offered in 2009-10.

After: Offered in alternate years. Offered in 2010-2011.

Rationale: Offered in alternate years.

Course #6 CHM345H5 Organic Synthesis

Before: Offered in alternate years. Offered in 2009-10.

After: Offered in alternate years. Not offered in 2010-2011.

Rationale:

Course #7 CHM371H5 Techniques in Biological Chemistry

Before:

After: **NOTE:** This is a half-credit (0.5) course that is offered over the full academic year.

Rationale: Special notation in calendar for non-standard courses.

Course #8 CHM391H5 Instrumental Laboratory

Before:

After: **NOTE:** This is a half-credit (0.5) course that is offered over the full academic year.

Rationale: Special notation in calendar for non-standard courses.

Course #9 CHM393H5 Chemical Synthesis Laboratory

Before:

After: **NOTE:** This is a half-credit (0.5) course that is offered over the full academic year.

Rationale: CHM356H1 has been replaced by CHM343H1 Note added 2 Nov 2009: Special notation in calendar for non-standard courses.

Course #10 CHM393H5 Chemical Synthesis Laboratory

Before: This laboratory course comprises the synthesis of inorganic, organometallic, and organic compounds, supplemented by physical measurements (e.g., ir, uv, ¹H NMR spectra, kinetics, etc.) of the products where appropriate. Approximately eight weeks each will be spent on two groups of core experiments, one in organic and one in inorganic synthesis. The remaining eight to ten weeks will be occupied by a choice of inorganic, organometallic, and/or organic experiments. [96P]

After: This laboratory course comprises the synthesis of inorganic, organometallic, and organic compounds, supplemented by physical measurements (e.g., ir, uv, ¹H NMR spectra, kinetics, etc.) of the products where appropriate. Approximately eight weeks each will be spent on two groups of core experiments, one in organic and one in inorganic synthesis. The remaining six to eight weeks will be occupied by a choice of inorganic, organometallic, and/or organic experiments. [96P]

Rationale: CHM356H1 has been replaced by CHM343H1 Note added 2 Nov 2009: Special notation in calendar for non-standard courses.

Course #11 CSC290H5 Communication Skills for Computer Scientists

Before: Targeted instruction and significant practice in the communications required for careers in computer science. The curriculum covers written, oral and interpersonal communication. Students will hand in short pieces of writing each week, will make oral presentations several times in the semester, and will work together in simulated project meetings and other realistic scenarios of pair and small group interaction. This can be used to satisfy the writing requirement in CSC programs. [36L]

After: Targeted instruction and significant practice in the communications required for careers in computer science. The curriculum covers written, oral and interpersonal communication. Students will hand in short pieces of writing each week, will make oral presentations several times in the semester, and will work together in simulated project meetings and other realistic scenarios of pair and small group interaction. This can be used to satisfy the writing requirement in CSC programs. [24L, 12T]

Rationale: The number of contact hours has been corrected to reflect the original intent of the department. Learning communication skills requires practice and feedback that can only be provided in a small group setting. Since the course was first offered, one hour each week has been used in a small-group tutorial.

Course #12 CSC310H5 Information Theory

Before: Measuring information. The source coding theorem. Data compression using ad hoc methods and dictionary-based methods. Probabilistic source models, and their use via Huffman and arithmetic coding. Noisy channels and the channel coding theorem. Error correcting codes, and their decoding by algebraic and probabilistic methods. [24L, 12T]

After: An introduction to reliable and accurate transmission of information. Entropy, lossless and lossy data compression, optimal compression, information channels, channel capacity, error-correcting codes, and digital fountain codes. Course concepts form the basis for practical applications such as ZIP and MP3 compression, channel coding for DSL lines, communication in deep space and to mobile devices, CDs and disk drives, the development of the Internet, as well as linguistics and human perception. [24L, 12T]

Rationale: Information theory is not a familiar subject to most students, and the existing calendar entry fails to describe its role in the study of computer science. The updated description provides more context to motivate the importance of the material in the

course.

Course #13 CSC363H5 Computational Complexity and Computability

Before: Although the courses CSC 363H5 and CSC 373H5 can be taken in any order, we recommend that CSC 373H5 be taken first.

After:

Rationale: CSC363H5 contains material that is accessible to mathematics students and that would be beneficial to computational theorists, and this proposal seeks to make the course easily accessible to students in the math specialist.

Course #14 CSC373H5 Algorithm Design and Analysis

Before: Although the courses CSC363H5 and CSC373H5 can be taken in any order, we recommend that CSC 373H5 be taken first.

After:

Rationale: CSC363H5 contains material that is accessible to mathematics students and that would be beneficial to computational theorists, and this proposal seeks to make the course easily accessible to students in the math specialist.

Course #15 ERS471H5 Research Project

Before:

After: **NOTE:** This half credit (0.5) course may be offered over the Fall Term(ERS471H5F), Winter Term(ERS471H5S) and over the full Academic Year(ERS471H5Y).

Rationale: Special notation in calendar for non-standard courses.

Course #16 ERS472H5 Research Project

Before:

After: **NOTE:** This half credit (0.5) course may be offered over the Fall Term(472H5F), Winter Term(ERS472H5S) and over the full Academic Year(ERS472H5Y).

Rationale: Special notation in calendar for non-standard courses.

Course #17 GGR227H5 Ecosystems and Environmental Change

Before: (Formerly Ecosystem Geography) This course introduces the rapidly advancing fields of ecosystem science through the exploration of how ecosystems respond to climate change, pollution, and intensive natural resource management. The impacts from anthropogenic stressors on ecosystem functioning are often complex, with interactions occurring among plants, microorganisms, and physical and chemical environments. Empirical and modelling approaches are explored as they allow us to understand and predict ecosystem functioning and the linkages and feedbacks with changing environments. Lecture topics and case studies focus primarily on important representative Canadian ecosystems that also play vital roles in the resource sector including forests, agricultural land, wetlands and aquatic ecosystems. [24L, 12P]

After: (Formerly Ecosystem Geography) This course introduces the rapidly advancing fields of ecosystem science through the exploration of how ecosystems respond to climate change, pollution, and intensive natural resource management. The impacts from anthropogenic stressors on ecosystem functioning are often complex, with interactions occurring among plants, microorganisms, and physical and chemical environments. Empirical and modelling approaches are explored as they allow us to understand and predict ecosystem functioning and the linkages and feedbacks with changing environments. Lecture topics and case studies focus primarily on important representative Canadian ecosystems that also play vital roles in the resource sector including forests, agricultural land, wetlands and aquatic ecosystems. [36L]

Rationale: The regular instructor of GGR277 prefers to move from 2 hours to 3 hours of weekly lecture and drop the weekly tutorial. It has become apparent that 24 lectures are not sufficient for covering the basic course lecture material and meeting course objectives, including important guest presentations by the academic skills centre and library staff and others dealing with key research and writing initiatives. TA resources are still required for the course to grade and conduct office hours, as it is a large course, however, there are no additional resources required.

Course #18 GGR307H5 Environmental Soil Science

- Before:** (Formerly Soil Management) Soils play critical roles in sustaining life. They support plants and agriculture, serve as home to a plethora of organisms, recycle organic matter and nutrients, provide materials for construction, art, and medicine, preserve paleoecological and archaeological records, regulate global climate through the exchange of greenhouse gasses, and filter contaminants in water and waste. This course introduces fundamentals of soil formation, physical, chemical and biological characteristics, and classification schemes. It explores the role of, and how humans interact with, soils in Canadian forests, wetlands, agricultural systems, and industrial and urban settings. Aspects of carbon, nutrient, and pollutant biogeochemistry in soils are explored in detail. There is one full-day field trip to a nearby forest, wetland and farm and subsequent laboratory exercises. [24L, 12P]
- After:** (Formerly Soil Management) Soils play critical roles in sustaining life. They support plants and agriculture, serve as home to a plethora of organisms, recycle organic matter and nutrients, provide materials for construction, art, and medicine, preserve paleoecological and archaeological records, regulate global climate through the exchange of greenhouse gasses, and filter contaminants in water and waste. This course introduces fundamentals of soil formation, physical, chemical and biological characteristics, and classification schemes. It explores the role of, and how humans interact with, soils in Canadian forests, wetlands, agricultural systems, and industrial and urban settings. Aspects of carbon, nutrient, and pollutant biogeochemistry in soils are explored in detail. There is one optional day field trip. [24L, 36P]
- Rationale:** Contrary to the calendar listing, the course has been taught with 2 hours of labs/PRA session per week since the instructor modified and began teaching this course. It has become apparent that even 24 hours of lab/PRA time is not sufficient to permit desirable short on-campus trips/nearby soil observation and sampling. In addition, certain laboratory exercises are too complicated to complete in 2 hours. Specifically, 9 of the 12 PRA sessions a semester need to run for 3 hours a week, as opposed to only 2 hours a week. Thus, the instructor has requested that the department fund an additional 9 hours per PRA session of TA time (to move from 24 hours a semester of lab/PRA time to 33 hours a semester of lab/PRA time). The department believes that this increase is warranted given the hands-on experience provided to students as part of this course. Furthermore, the instructor feels that the field trip should no longer be a mandatory field trip, as originally planned. Instead soils for subsequent laboratory analysis are more conveniently sampled locally. A more manageable optional field trip will be offered to interested students.
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Course #19 GGR379H5 Field Methods in Physical Geography

- Before:** This course is structured around one major weeklong field trip outside southern Ontario that will occur before fall-term courses begin, preparatory work, and approximately bi-weekly course meetings during the regular academic term to complete complementary work in computer and/or wet laboratories. Field projects will involve analyses and mapping of vegetation, soils, aquatic systems, hydrology, and/or geomorphology, and subsequent data analysis. Students will be required to write one major research paper and present projects to the class. Each student is required to pay the costs of his/her transportation and accommodation. Students must register with the Department by June and should contact the Department to find out more details about the specific fieldtrip plans.
- After:** This course is structured around one major field trip that will occur before fall-term courses begin, preparatory work, and approximately bi-weekly course meetings during the regular academic term to complete complementary work in computer and/or wet laboratories. Field projects will involve analyses and mapping of vegetation, soils, aquatic systems, hydrology, and/or geomorphology, and subsequent data analysis. Students will be required to write one major research paper and present projects to the class. Each student is required to pay the costs of his/her transportation and accommodation. Students must register on ROSI, on a first-come first-serve and non-refundable deposit basis. The deposit must be received by the Department within one week from the first day of enrollment or the student will be dropped automatically from the course. Students should contact the Department to find out more details about the specific fieldtrip plans.
- Rationale:** Remove "weeklong field trip outside southern Ontario" to replace one major field trip. This provides instructors with have the flexibility to choose the field locations that is either local or further a field depending on changing circumstances such as demand for the course, faculty research projects, affordability and availability of field locations. Add in "first-come first-serve and non refundable deposit basis. The deposit must be made to the Department within one week from the first day of enrollment or the student will be dropped automatically from the course." This will provide students with better information about the administrative procedure to be followed.
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Course #20 GGR406H5 Advanced Biogeochemistry

- Before:** Biogeochemistry explores the intersection of biological, chemical, and geological processes that shape the environment. In an era of unprecedented human-induced environmental and climate change, research in this field is advancing rapidly. This seminar course explores the processes underlying biogeochemical cycles and examines how humans alter these cycles. Topics include microbial and plant-mediated carbon and nutrient cycling in terrestrial and aquatic ecosystems, controls on greenhouse gas fluxes and climate change mitigation strategies in soils, the role of biological diversity in biogeochemical processes, and exploration into how new molecular and isotope techniques are improving the study of biogeochemical processes. [24S]
- After:** Biogeochemistry explores the intersection of biological, chemical, and geological processes that shape the environment. In an era of unprecedented human-induced environmental and climate change, research in this field is advancing rapidly. This seminar course explores the processes underlying biogeochemical cycles and examines how humans alter these cycles. Topics include microbial and plant-mediated carbon and nutrient cycling in terrestrial and aquatic ecosystems,

controls on greenhouse gas fluxes and climate change mitigation strategies in soils, the role of biological diversity in biogeochemical processes, and exploration into how new molecular and isotope techniques are improving the study of biogeochemical processes. [36S]

Rationale: The number of hours is being increased to deepen the level of material covered in the seminar. This more easily allows for the last 2 weeks of classes being devoted to student presentations. Developing presentation skills is an important objective of the course. In addition, the instructor will cover more material and add an important innovative aspect to the course: students will have web-cam based interactions with senior scientists who have authored selected journal articles read in the class. Students will be able to ask questions directly about anything that is unclear, and also gain insight into the scientific process and how a range of eminent scientists approach environmental science research. To include this innovation, additional class time is needed.

Course #21 JCP410H5 Modelling of Biochemical Systems

Before: Offered in alternate years, alternating with JCP422H5. Offered in 2009-10.

After: Offered in alternate years, alternating with JCP422H5. Not offered in 2010-11.

Rationale:

Course #22 JCP422H5 NMR Spectroscopy

Before: Offered in alternate years, alternating with JCP410H5.
Not offered in 2009-10.

After: Offered in alternate years, alternating with JCP410H5.
Offered in 2010-2011.

Rationale:

Course #23 MAT302H5 Introduction to Algebraic Cryptography

Before: This course will consist of an introduction to the theory of finite fields. We will also discuss some of the many practical applications of finite fields, including algebraic coding theory for the error-free transmission of information and cryptology for the secure transmission of information. [36L, 12T]

After: The course will introduce the students to the methods of algebra and number theory used in modern cryptography. The topics to be covered include: an overview of basic ciphers such as shift/substitution/permutation ciphers; block ciphers and Feistel ciphers; RSA and Factoring; finite fields, elliptic curves, and Discrete Log-Based Systems. [36L, 12T]

Rationale: This description better reflects the needs of Information Security Program and will be attractive to other MCS students who would like to get acquainted with modern cryptography.

Course #24 MAT392H5 Ideas of Mathematics

Before: This is a one-term course to give students extensive practice in the writing of mathematics. The format will be to study excellent expositions of important ideas of mathematics and then to assign short writing assignments based on them. [48L]

After: This is a one-term course to give students extensive practice in the writing of mathematics. The format will be to study excellent expositions of important ideas of mathematics and then to assign short writing assignments based on them. [36L, 12T]

Rationale: When first introduced, MAT392 was mistakenly listed without tutorial hours. Students learning communication skills benefit from the guided practice and individual feedback offered in a tutorial section, so this course has always been taught with 12 T. The lecture hours have been reduced because 48 L is not normal for a math course. This leads to an unusually heavy load for the faculty and students and decreased enrolment.

Course #25 PHY242H5 Thermal Physics and Fluid Mechanics

Before: An introduction to the basic concepts and modern analysis of thermal physics and fluids. Topics include: work and heat, laws of thermodynamics, thermodynamic properties and cycles, entropy, conservation of mass and energy, description of fluids in motion, inviscid and viscous fluid flows, internal and external flows, heat transfer by conduction, convection and radiation, boiling and condensation. [24L, 16P, 8T]

After: An introduction to the basic concepts and modern analysis of thermal-fluid sciences. Topics include: Introduction and Basic Concepts, Energy, Energy Transfer, General Energy Analysis, Energy Analysis of Closed Systems, Mass and Energy Analysis of Control Volumes, Mechanisms of Heat Transfer, Steady Heat Conduction, Transient Heat Conduction, Forced Convection, Natural Convection, Fundamentals of Thermal Radiation, Radiation Heat Transfer, Heat Exchangers, Introduction to Fluid Mechanics, Properties of Fluids, Fluid Statics, Fluid Kinematics, Bernoulli and Energy Equations,

Momentum Analysis of Flow Systems, Internal Flow, External Flow: Drag and Lift. Transport Processes and Diffusion. [24L, 16P, 8T]

Rationale: To eliminate any duplication of information between this course, especially in the part of thermodynamics, and other courses in the chemistry discipline, especially Introductory Physical Chemistry CHM221H. To add some sections, asked for by some physics colleagues, to enrich the various programs in physics at UTM. Based on the new modification of the course content the new title is closer to the planned material to be offered. It is concise and informative.

Course #26 PHY331H5 Foundations of Biophysics

Before:

After: Offered in alternate years, alternating with PHY332H5. Not offered in 2010-2011.

Rationale:

Course #27 PHY332H5 Molecular Biophysics

Before: Not offered in 2009-10.

After: Offered in alternate years, alternating with PHY331H5. Offered in 2010-2011.

Rationale: Lack of Faculty complement.

Course #28 PHY424H5 Biophysical Techniques

Before: Not offered in 2008-09.

After: Offered in 2010-2011.

Rationale:

Course #29 PHY441H5 Physics of the Cell

Before: Not offered in 2008-09.

After: Offered in 2010-2011.

Rationale:

Course #30 PSY295H5 Introduction to Neuropsychology

Before: (Formerly Psychology and the Brain in the Popular Press) An introduction to the basic principles of neuroscience and the field of neuropsychology, the study of the pathological brain. Topics include: visual disorders, split brain research, neurodegenerative disorders, the brain pathology associated with each disorder, and the effect on behaviour. [36L]

After: An introduction to the basic principles of neuroscience and the field of neuropsychology, the study of the pathological brain. Topics include: visual disorders, split brain research, neurodegenerative disorders, the brain pathology associated with each disorder, and the effect on behaviour. [36L]

Rationale: Old title appearing in first line of course description is not necessary as course has been removed years ago.

Course #31 PSY442Y5 Practicum in Exceptionality in Human Learning

Before: Seminar and practicum on issues relating to the life-long development of individuals with disabilities. Seminar at U of T Mississauga; practicum involves supervised placements in schools or social service agencies. Course is required for students enrolled in the Exceptionality in Human Learning Specialist program and is available to Psychology Specialists, Exceptionality in Human Learning Majors and Psychology Majors and Minors on a competitive basis. Course fulfills the 400 level seminar requirement for the Psychology Specialist Program. [72S, 72P]

After: Seminar and practicum on issues relating to the life-long development of individuals with disabilities. Seminar at U of T Mississauga; practicum involves supervised placements in schools or social service agencies. Course is required for students enrolled in the Exceptionality in Human Learning Specialist program and is available to Psychology Specialists, Exceptionality in Human Learning Majors and Psychology Majors and Minors on a competitive basis. Course fulfills the 400 level seminar requirement for the Psychology Specialist Program. Interested students must apply by the end of May by completing application available from the Internship Office, Room 3004 South. [72S, 80P]

Rationale:

New procedure for enrollment was added. Like the Thesis course - this course requires much advanced planning and preparation and as such this information is vital in the course description. Practical hours were changed from 72 to 80 hours to reflect the actual number of hours students tend to spend at their placements. There are no resource implications.

Course #32 SCI498H5 TOPS: Teaching Opportunity Program in the Sciences

Before: See: www.utm.utoronto.ca/~scied/tops

After: See: www.utm.utoronto.ca/~scied/tops **NOTE:** This half credit (0.5) course may be offered over the Fall Term(SCI498H5F), Winter Term(SCI498H5S) and over the full Academic Year(SCI498H5Y).

Rationale: Special notation in calendar for non-standard courses.

Course #33 SCI499H5 Science Education Project

Before:

After: **NOTE:** This half credit (0.5) course may be offered over the Fall Term(SCI498H5F), Winter Term(SCI498H5S) and over the full Academic Year(SCI498H5Y).

Rationale: Special notation in calendar for non-standard courses.

Course #34 STA304H5 Surveys, Sampling and Observational Data

Before: The sample survey is a widely used technique for obtaining information about a large population at relatively small cost. Only probability samples can provide both an estimator and a measure of sampling error from the data itself. In addition to sampling error, non-sampling errors (refusals, not-at-home, lies, inaccuracies, etc.) are always present, and can produce serious biases.

The course covers all aspects of survey design and practice. It includes the basic sampling theory, together with such techniques as stratification, multi-stage sampling, ratio estimation, etc. which increase precision and reduce costs. Methods for reducing important non-sample errors are also discussed. [24L, 12T]

After: The sample survey is a widely used technique for obtaining information about a large population at relatively small cost. Only probability samples can provide both an estimator and a measure of sampling error from the data itself. In addition to sampling error, non-sampling errors (refusals, not-at-home, lies, inaccuracies, etc.) are always present, and can produce serious biases. The course covers: design of surveys, sources of bias, randomized response surveys. Techniques of sampling; stratification, clustering, unequal probability selection. Sampling inference, estimates of population mean and variances, ratio estimation, observational data; correlation vs. causation, missing data, sources of bias. [24L, 12T]

Rationale: The course number/title/information has changed at the St George campus, while the content remains the same as before. We are effecting the corresponding change at UTM to keep the course offerings uniform between the campuses and since the new course information better reflects the content.

Course #35 STA413H5 Estimation and Testing

Before: This course replaces STA412H5. Theory of statistical estimation and hypothesis testing. This course emphasizes abstraction and rigour. [36L, 12T]

After: This course replaces STA412H5. This course covers advanced topics in probability and mathematical statistics. Topics include convergence in probability, convergence in distribution, and convergence with probability one, sufficiency, completeness, Rao-Blackwell and Lehman-Scheffe theorems, and asymptotics. [36L, 12T]

Rationale: The old course description is too brief.

Changes in Course Name

Course #1 MAT302H5 Introduction to Algebraic Cryptography

Before: Finite Fields and Applications

After: Introduction to Algebraic Cryptography

Rationale: This description better reflects the needs of Information Security Program and will be attractive to other MCS students who would like to get acquainted with modern cryptography.

Course #2 PHY242H5 Thermal Physics and Fluid Mechanics

Before: Heat, Thermodynamics, and Fluid Mechanics

After: Thermal Physics and Fluid Mechanics

Rationale: To eliminate any duplication of information between this course, especially in the part of thermodynamics, and other courses in the chemistry discipline, especially Introductory Physical Chemistry CHM221H. To add some sections, asked for by some physics colleagues, to enrich the various programs in physics at UTM. Based on the new modification of the course content the new title is closer to the planned material to be offered. It is concise and informative.

Course #3 STA304H5 Surveys, Sampling and Observational Data

Before: Design of Sample Surveys

After: Surveys, Sampling and Observational Data

Rationale: The course number/title/information has changed at the St George campus, while the content remains the same as before. We are effecting the corresponding change at UTM to keep the course offerings uniform between the campuses and since the new course information better reflects the content.

Courses - Other Changes

Course #1 BIO215H5 Laboratory in Molecular Biology and Genetics

Before: Prerequisite: 60% in BIO206H5

After: Prerequisite: BIO206H5

Rationale: 60% grade requirement in pre-requisite BIO206H5 was put in place years ago. The course has since changed instructors and teaching method and receiving a passing grade in BIO206H5 should allow students to be successful in this course.

Course #2 BIO314H5 Laboratory in Cell and Molecular Biology

Before: Corequisite: BIO315H5

After: Corequisite:

Rationale: It is felt that BIO215H5 (the course pre-requisite) is sufficient preparation for the course and BIO315H5 is not needed as a co-requisite.

Course #3 BIO360H5 Biometrics I

Before: Course Exclusion: ECO220Y5; PSY201H5; SOC300Y5; STA218H5, 220H5, 248H5, 257H5

After: Course Exclusion: ECO220Y5; PSY201H5; SOC300Y5; STA218H5, 219H5, 220H5, 248H5, 257H5

Rationale: The format for this course has been changed to better accommodate for term tests and more course material now that UTM has moved from a 13-week semester to a 12-week semester. The change will also allow for the instructor to more fully cover the course material.
STA219H5 is a new course that is being introduced in 2010-11 and has BIO360H5 listed as an exclusion. We are adding this new course to our list of exclusions to maintain continuity and consistency across both departments.

Course #4 BIO409H5 Laboratory in Physiology

Before: Prerequisite: BIO304H5, 310H5

After: Prerequisite: BIO304H5, 204H5/310H5

Rationale: Both BIO204H5 and BIO310H5 are appropriate preparation for this course, with BIO204H5 giving training in labs and BIO310H5 having more theory.

Course #5 CHM140Y5 The Study of Matter and Its Transformations

Before: Corequisite: MAT132Y5/134Y5/135Y5/137Y5/138Y5
Course Exclusion: CHM135Y5, 150Y5, 132H1, 133H1, 137Y1, 139H1, 151Y1

After: Corequisite: MAT134Y5/135Y5/137Y5
Course Exclusion: CHM139H1, 151Y1

Rationale: 2. Change exclusions to read CHM139H1, CHM151Y1 - DELETIONS ARE COURSES THAT ARE NO LONGER OFFERED AND HAVE NOT BEEN OFFERED FOR OVER 5 YEARS.
3. Change corequisites to read MAT134Y5/135Y5/137Y5 - DELETIONS ARE COURSES THAT ARE NO LONGER OFFERED.

Course #6 CHM211H5 Fundamentals of Analytical Chemistry

Before: Course Exclusion: CHM217H1, 219H1, 268H1, 269H1

After: Course Exclusion: CHM217H1

Rationale: Updating course requirements

Course #7 CHM231H5 Inorganic Chemistry I

Before: Course Exclusion: CHM238Y1, 239H1

After: Course Exclusion: CHM238Y1

Rationale: updating course requirement

Course #8 CHM242H5 Introductory Organic Chemistry I

Before: Course Exclusion: CHM138H1, 240Y5, 241H5, 248Y1

After: Course Exclusion: CHM138H1

Rationale: updating course requirement

Course #9 CHM243H5 Introductory Organic Chemistry II

Before: Course Exclusion: CHM240Y5, 241H5, 247H1, 248H1

After: Course Exclusion: CHM247H1, 249H1

Rationale: updating course requirement

Course #10 CHM311H5 Instrumental Analytical Chemistry

Before: Course Exclusion: CHM314Y1, 319H1
Recommended Preparation: CHM221H5

After: Course Exclusion: CHM314Y1, 317H1
Recommended Preparation: JCP221H5

Rationale: Exclusions: CHM314Y1 replaced by CHM317Y1 - CHM319H1 no longer offered

Recommended Preparation: CHM221H5 replaced by JCP221H5

Course #11 CHM331H5 Inorganic Chemistry II: Advanced Inorganic Chemistry

Before: Course Exclusion: CHM338H1, 339H1

After: Course Exclusion: CHM338H1

Rationale: this seems to be referring to a St George course that no longer exists

Course #12 CHM333H5 Bioinorganic Chemistry

Before: Course Exclusion: CHM338H1, 437H1

After: Course Exclusion: CHM437H1

Rationale: Under exclusions, delete CHM338H1. - THERE IS LITTLE TO NO OVERLAP BETWEEN THIS COURSE AND CHM333H5. THIS EXCLUSION NEVER SHOULD HAVE BEEN APPLIED TO THIS COURSE.

Course #13 CHM345H5 Organic Synthesis

Before: Course Exclusion: CHM345H1, 346H1

After: Course Exclusion: CHM342H1

Rationale: 1. Offered in alternate years.
2. Exclusions: CHM345H1 has been replaced by CHM342H1; CHM346H1 has been discontinued.

Course #14 CHM393H5 Chemical Synthesis Laboratory

Before: Course Exclusion: CHM338H1, 346H1, 348H1

After: Course Exclusion: CHM338H1, 343H1, 348H1

Rationale: CHM356H1 has been replaced by CHM343H1 Note added 2 Nov 2009: Special notation in calendar for non-standard courses.

Course #15 CHM463H5 Biophysical Methods for Studying Biological Molecules

Before:

Prerequisite: CHM221H5, 361H5, 362H5
Recommended Preparation:

After: Prerequisite: CHM361H5, 362H5
Recommended Preparation: JCP221H5

Rationale: Updating course requirements

Course #16 CHM489Y5 Introduction to Research in Chemistry

Before: Course Exclusion: CHM418Y1, 428Y1, 439Y1, 449Y1, 499Y1

After: Course Exclusion: CHM499Y1

Rationale: Exclusions: CHM418Y1, 428Y1, 439Y1, 449Y1 - all 4th year research course codes have been converted into one CHM499Y1.

Course #17 CSC290H5 Communication Skills for Computer Scientists

Before: Prerequisite:

After: Prerequisite: 0.5 CSC credits

Rationale: This course depends on the student having some prior programming experience to motivate the material, so a prerequisite of some CS experience has been added.

Course #18 CSC363H5 Computational Complexity and Computability

Before: Prerequisite: CSC290H5, 236H5/238H5

After: Prerequisite: (CSC290H5, 236H5/238H5)/MAT202H5

Rationale: CSC363 contains material that is accessible to mathematics students and that would be beneficial to computational theorists, and this proposal seeks to make the course easily accessible to students in the math specialist. MAT202H5 is a required MAT course and guarantees that the students will have sufficient background in set theory and in writing proofs.

Course #19 CSC422H5 Cryptography and Computational Complexity

Before: Prerequisite: CSC290H5, 347H5, CSC363H5

After: Prerequisite: CSC290H5, 363H5

Rationale: This course could be of interest to theory-oriented students in the computer science programs at the other University of Toronto campuses. Removing the CSC347H5 prerequisite (which is only offered at UTM) allows these students to more easily enrol in CSC422. The current instructor agrees that the motivating security principles can be covered without slowing down the course.

Course #20 ECO220Y5 Quantitative Methods in Economics

Before: Course Exclusion: BIO360H5, 361H5; ECO227Y5; MAT(123H1,124H1); STA218H5, 220H5, 221H5, STA250H1, 248H5/258H5, 255H1, 257H5, 261H5; PSY201H5, 202H5; SOC300Y5

After: Course Exclusion: BIO360H5, 361H5; ECO227Y5; MAT(123H1,124H1); STA218H5, 220H5, 221H5, STA250H1, 248H5/258H5, 255H1, 257H5, 261H5; PSY201H5, 202H5; SOC350H5, 351H5

Rationale: SOC300Y5 no longer exists. Additional SOC courses contain similar content and Sociology lists ECO220Y5 & 227Y5 as exclusions.

Course #21 ECO227Y5 Quantitative Methods in Economics

Before: Course Exclusion: BIO360H5, 361H5; ECO220Y5; STA218H5, 220H5, 221H5, 248H5/258H5, 250H1, 255H1, 257H5, 261H5; PSY201H5, 202H5; MAT(123H1,124H1); SOC300Y5

After: Course Exclusion: BIO360H5, 361H5; ECO220Y5; STA218H5, 220H5, 221H5, 248H5/258H5, 250H1, 255H1, 257H5, 261H5; PSY201H5, 202H5; MAT(123H1,124H1); SOC350H5, 351H5

Rationale: SOC300Y5 no longer exists. Additional SOC courses contain similar content and Sociology lists ECO220Y5 and 227Y5 as exclusions.

Course #22 GGR379H5 Field Methods in Physical Geography

Before: Prerequisite: Any 3.0 courses drawn from one or more of the following : Physical Geography, Earth Sciences and Biology.
After: Prerequisite: Any 3.0 courses drawn from one or more of the following : Physical Geography, Earth Sciences and Biology or PI.
Rationale: Prerequisite change: PI is added in for selection of potential students in the course by the instructor.

Course #23 JCP321H5 Introduction to Quantum Mechanics

Before: Prerequisite: PHY135Y5; MAT212H5/223H5/232H5/242H5/248Y5/258Y5; CHM221H5/PHY(241H5, 245H5)
After: Prerequisite: PHY135Y5; JCP221H5/CHM221H5/PHY245H5; MAT212H5/223H5/232H5
Rationale: MAT248HY5 and 258Y5 are no longer offered, CHM221H5 replaced by JCP221H5, PHY241H5 is not an essential preparation for an introductory quantum mechanics course.

Course #24 JCP322H5 Introduction to Statistical Mechanics

Before: Course Exclusion: CHM229H1, 328H1, 327Y1
After: Course Exclusion: CHM328H1, 327Y1
Rationale: updating course requirements

Course #25 JCP410H5 Modelling of Biochemical Systems

Before: Prerequisite: PHY135Y5/137Y5; MAT212H5/222H5/223H5/232H5/242H5; CHM221H5/PHY241H5/PHY245H5
After: Prerequisite: JCP221H5/CHM221H5/PHY241H5; MAT212H5/223H5/232H5/233H5/242H5
Rationale: i) PHY137Y5 and MAT222H5 are no longer offered, ii) CHM221H5 replaced by JCP221H5, iii) any 200 level PHY course would be sufficient preparation for this course.

Course #26 MAT102H5 Introduction to Mathematical Proofs

Before: Course Exclusion: This course may not be taken for degree credit by any student who has taken or is currently enrolled in any third year MAT course.
After: Course Exclusion:
Rationale: This exclusion is no longer relevant since MAT102 is a prerequisite for higher-level studies in mathematics.

Course #27 MAT392H5 Ideas of Mathematics

Before: Prerequisite: Completion of the first- and second-year requirements for the Major Program in Mathematical Sciences.
After: Prerequisite: Completion of the first- and second-year requirements for the Major and Specialists Programs in Mathematical Sciences.
Rationale: This course is required for Specialists and elective for Majors, and we want to ensure that they will be able to register when it is offered.

Course #28 PHY331H5 Foundations of Biophysics

Before: Prerequisite: PHY241H5/245H5, PHY242H5/CHM221H5
After: Prerequisite: PHY242H5, JCP221H5
Rationale: Lack of Faculty complement
PHY242H and JCP221H5 (former CHM221H5) do not overlap anymore and are both required, PHY241H5 and PHY245H5 are not essential preparation for this course.

Course #29 PHY332H5 Molecular Biophysics

Before: Prerequisite: PHY247H5, PHY242H5/CHM221H5
After: Prerequisite: PHY242H5, JCP221H5
Rationale: Lack of Faculty complement.
PHY242H5 and JCP221H5 (former CHM221H5) do not overlap anymore and are both required, PHY247H5 is not an essential preparation for this course.

Course #30 PHY424H5 Biophysical Techniques

Before: Corequisite: PHY441H5

After: Corequisite:

Rationale: Co-requisite PHY441H5 does not apply, oversight from previous calendar.

Course #31 PHY441H5 Physics of the Cell

Before: Corequisite: Phy424H5

After: Corequisite:

Rationale: Co-requisite Phy424H5 does not apply, oversight from previous calendar.

Course #32 PHY489Y5 Introduction to Research in Physics

Before: Prerequisite: PHY331H5, 332H5, 341H5, JCP321H5, 332H5, PHY324H5/CHM371H5

After: Prerequisite: 2.0 300 level credits in PHY/JCP; PHY324H5/CHM371H5/CHM391H5

Rationale: More flexible requirements in order to include more students, particularly from Chemistry stream.

Course #33 PSY201H5 Research Design and Analysis in Psychology I

Before: Course Exclusion: BIO360H5/ECO220Y5/227Y5/SOC300Y5/350H5/STA218H5/220H5

After: Course Exclusion: BIO360H5/ECO220Y5/227Y5/SOC300Y5/350H5/STA218H5/219H5/220H5

Rationale: STA219H5 is a new course offered with considerable content overlap with PSY201H5

Course #34 PSY343H5 Theories of Psychotherapy

Before: Course Exclusion: PSY332H5

After: Course Exclusion:

Rationale: Exclusion has been removed as PSY332H5 has not been offered for many years.

Course #35 PSY351H5 Evolutionary Psychology

Before: Prerequisite: PSY201H5/equivalent, 270H5, 290H5

After: Prerequisite: PSY201H5/equivalent, 270H5, 252H5/290H5/295H5

Rationale: Correction of error of omission. All 300 level PSY courses that cover the biological basis of behavior permit entry through one of our 200 level courses that provide basic information about this area. These three courses are:

PSY252H5 - Introduction to Animal Behaviour

PSY290H5 - Introduction to Physiological Psychology

PSY295H5 - Introduction to Neuropsychology

Previously only PSY290H5 was listed

Course #36 PSY385H5 Hearing and Hearing Disorders

Before: Prerequisite: PSY201H5/equivalent, 280H5/CCT202H5

After: Prerequisite: PSY201H5/equivalent, 210H5/213H5/270H5/274H5/280H5/295H5/CCT202H5

Rationale: Expansion of prerequisite list is consistent with the scope of the course insofar as it relates the topic of normal and abnormal hearing to a variety of topics in psychology, not just perception. This will enable a larger pool of students to access the course (we had many requests this year from students who had PSY213H5 - Aging but not PSY280H5 - Perception).

Course #37 PSY490H5 Advanced Topics in Biological Psychology

Before: Prerequisite: PSY270H5/290H5/295H5/BIO204H5; 1.0 credit from PSY346H5, 362H5, 372H5/397H5, 395H5, 398H5, 399H5; BIO304H5

After: Prerequisite: PSY270H5/290H5/295H5/BIO204H5; 1.0 credit from PSY346H5, 362H5, 372H5, 395H5, 397H5, 398H5, 399H5, BIO304H5

Rationale: Correction of minor syntax errors in prerequisite list. Prerequisites were NOT changed.

Course #38 SCI498H5 TOPS: Teaching Opportunity Program in the Sciences

Before: Recommended Preparation: Prerequisite or Corequisite of SCI398Y5/SCI395H5

After: Recommended Preparation:

Rationale: Special notation in calendar for non-standard courses.
Recommended Preparation: Prerequisite or Corequisite of SCI398Y5/SCI395H5 not really necessary

Course #39 STA107H5 An Introduction to Probability and Modelling

Before: Course Exclusion: STA257H5, ECO227Y5

After: Course Exclusion: STA257H5

Rationale: There is not enough overlapping content between ECO227Y5 and STA107H5 to justify this exclusion.
