University of Toronto Misssissauga:
Proposed Program Changes for 2007-08

A) New Programs

1. Biological Physics – Specialist

Program Description and Rationale

The proposed specialist program in Biological Physics is a direct outcome of the "Stepping Up" Plan for the Department of Chemical and Physical Sciences. In that plan, consensus within the department was reached that a specialization in the area of biological physics was the preferred way to develop a high quality undergraduate program in physics that was sufficiently distinct from those offered by other divisions of the University of Toronto. Such a program also leverages off the existing expertise of the department in the area of biological and physical chemistry. As well, it responds to growing student demand for a program that applies physical techniques and methodologies to problems in biology and medicine. In the longer term, this new program will provide our students with the opportunity to collaborate with clinicians and other medical scientists involved in the University of Toronto Mississauga Medical Academy.

The program provides students with a strong background in the fundamentals of physics, chemistry and mathematics as well the application of these tools to the study of biological systems. Students who successfully complete this program will have the skill set necessary to complete a graduate program in biological physics or allied fields within chemistry and biology. Courses that are to be introduced as part of this program will provide additional options for students in existing programs within the department including the major in Physics.

Permanent faculty with a direct interest in the program include physicists (Barzda, Ghobriel, Gradinaru, and Moore) and chemists (Macdonald, McMillen and Prosser). In addition, there is an approved "Stepping Up" plan position for a biological physicist to be searched for in 2007/2008, who will also participate in the program.

Current enrolment in our Physics major program is approximately 20 to 25 students per year. It is anticipated that approximately fifty percent of our majors will opt for this new specialist program. We anticipate that once the program is established, students who would not otherwise consider attending the University of Toronto Mississauga to study physics will opt to enroll here to take advantage of this unique program.

The introduction of this program will build upon existing courses within the Departments of Chemical and Physical Sciences, Mathematical and Computational Sciences and Biology as well as three new half courses in optics and biological physics that will be taught by our recently arrived biological physicist, Gradinaru, or the new biological physicist to be hired next year.

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Consultations leading up to the introduction of this program were held with interested parties in the Department of Biology at the University of Toronto Mississauga as well as with the Graduate Department of Physics at the University of Toronto.

Learning Objectives:

- To provide students with a foundation in physics and allied fields.
- To provide students with the physical, chemical and mathematical tools necessary to understand and solve problems in biology and medicine.
- To provide students with first hand research experience in the application of physics to biology and medicine.
- To provide students with a high level of training in physics and allied fields that will allow them to continue their studies at the graduate level.

Program Requirements:
Within an Honours Degree, 13.0 credits are required.

Limited Enrolment: Enrolment in the program is restricted to students with 70% in PHY135Y and CHM140Y.

Year 1	PHY135Y5; CHM140Y5; (MAT135Y5/137Y5)
Year 2	PHY241H5; PHY242H5, 245H5, 247H5; MAT223H5, 242H5; CHM221H5; BIO206H5
Year 3	PHY331H5, 332H5; JCP321H5, 322H5; MAT311H5; MAT332H5/STA257H5); CHM371H5
Year 4	PHY424H5; PHY441H5; PHY489Y5; JCP310H5/422H5

The following new courses are proposed as part of the introduction of this program:

PHY247H5 –Optics

A comprehensive and up-to-date introduction to classical optics. Topics include: the electromagnetic theory of light, geometrical optics, and phenomena such as polarization, interference and diffraction. The course also covers the interaction of light with matter, the optics of the eye, the basics of coherence theory, lasers and selected modern applications in research and everyday life.

PHY424H5 - Biophysical Techniques

The laboratory course will provide hands on experience with advanced biophysical techniques applied for structural and kinetic characterization of biological systems. The following techniques will be introduced: absorption, fluorescence, linear and circular dichroism spectroscopy, confocal microscopy, optical tweezers, electron microscopy, atomic force microscopy, patch clamp, flash photolysis, photoelectric spectroscopy, photo-acoustics, calorimetry, and oxygen electrode.

PHY441H5 - Physics of the Cell

A biophysical description of the structural properties and biological processes of the cell. The course will focus on: cell division, differentiation and growth, cell motility and muscular movement, cellular communication, cellular signal transduction and control, neural and molecular networks, nerve impulses, action potential, synaptic signal transmission, bioenergetics of the cell, photosynthesis and respiration, photobiophysics, photoreception, and bioluminescence.

2. Crime, Law and Deviance – Specialist

Program Description and Rationale

The proposed specialist in Crime, Law and Deviance is a direct outcome of the "Stepping Up" Plan for the Department of Sociology. As well, it responds to growing student demand for a more specialized program of study in criminology and law at the University of Toronto Mississauga. The objectives of the specialist are to provide our very best students with the possibility of pursing intensive research at the undergraduate level and to expose them to more specialized courses reflecting current theoretical, empirical and international developments. Advanced programs in law and criminology have among the most demanding and competitive entry requirements in the social sciences. The specialist will strengthen the ability of our students to competitively apply to these programs.

It is anticipated that approximately twenty percent of our very best majors will opt for the Specialist (approximately 35-40 students). The requirements for the specialist will ensure that students obtain a strong foundation in theory and methods as well as in substantive areas in law and criminology. In recent years, we have introduced two new fourth-year seminars which enable students to specialize in sub-areas of the discipline. Moreover, we are introducing two new Independent Research courses at the third and fourth year levels to provide students with an opportunity to design and pursue their research interests at the undergraduate level. This will provide a solid educational foundation for those pursuing a masters or law degree.

The program adopts an interdisciplinary approach where students, once having completed their core requirements in the Department of Sociology, are encouraged to pursue courses in related disciplines such as psychology, philosophy, forensics, political science, geography and communications. We consulted with the Chairs of all related departments and received overwhelming support and approval to cross-list their courses.

As a result of new faculty hiring, we were able to introduce a wide array of courses, particularly at the third and fourth year levels. The Department currently has 16 faculty members, four of whom are pursuing active research agendas and teach exclusively in the Crime, Law and Deviance program. The program primarily relies on existing courses taught within the university; hence, there are no anticipated resource requirements.

Learning Objectives:

- To provide a foundation for students with an academic interest in law, crime and criminal justice.
- To provide students with the tools necessary to understand and analyze the complexities of criminal justice and deviant beahviour.
- To provide students with an understanding of the administration of legal and criminal justice, particularly in relation to public policy issues.
- To provide students with first hand research experience in the areas of crime, law and deviance.
- To ensure a competitive advantage among our students when applying for funding or to law schools and graduate programs in criminology or sociology.

Program Requirements:

ERSPE0727 – Crime Law and Deviance – Specialist Program

Within an Honours degree, 10.0 credits are required; including SOC100H5, 221H5, 222H5, 231H5, 307H5, 350H5, 387H5; 1.0 SOC credit at the 400 level, and 2.0 credits must be selected from Group A and an additional 3.0 credits from Group A or Group B.

Limited Enrolment --Students may apply to enroll after having completed 4.0 or more credits, with a mark of 70% or higher in SOC100H and a CGPA of at least 2.0. An average of 70% or higher must be achieved after having completed 2 or more SOC courses and a CGPA of 2.0.

First Year:	SOC100H5
Higher Years:	1. SOC211H5, 221H5, 222H5, 231H5 2. SOC307H5, 350H5, 387H5 3. 1.0 credit at the 400 level
Optional Courses:	2.0 credits must be selected from **Group A** and an additional 3.0 credits from **Group A or Group B.** **Group A:** SOC209H5, 216H5, 310H5, 316H5, 323H5, 371H5, 393H5, 420H5, 421H5, 455H5, 456H5, 493H5 **Group B:** ANT205H5, 369H5 CCT206H5 FSC239Y5, 260H5, 271H5, 360H5, 361H5 GGR313H5 PHL271H5, 283H5, 370H5 POL214Y5, 332Y5, 340Y5, 353Y5 PSY220H5, 230H5, 240H5, 270H5, 325H5, 328H5, 340H5, 341H5, 344H5, 420H5, 440H5 SOC232H5, 236H5, 284H5, 302H5, 332H5, 333H5, 339H5, 351H5, 354H5, 363H5, 365H5, 368H5, 388H5

In addition to the current course offerings (noted later in this document) the following new courses have been introduced:

SOC393H5 Independent Research in Crime, Law and Deviance (SSc)

To enrol, a student must submit a specific proposal and obtain the approval of both the instructor and the Faculty Advisor for the Crime, Law and Deviance Program. Intended for Crime, Law and Deviance Specialists and Majors who have completed at least 10.0 credits and who wish to explore in depth a particular subject area in Crime, Law and Deviance. In order to enrol, students must have attained an average of at least 70% in SOC courses. Students may take a maximum of 2.0 credits, or its equivalent, of independent studies. No more than 1.0 credit may be taken with the same instructor. Prerequisite: SOC100H5/SOC101Y5, 200Y5/(SOC221H5, 222H5), SOC307H5

SOC493H5 Independent Research in Crime, Law and Deviance (SSc)

To enrol, a student must submit a specific proposal and obtain the approval of both the instructor and the Faculty Advisor for the Crime, Law and Deviance Program. Intended for Crime, Law and Deviance Specialists and Majors who have completed at least 10.0 credits and who wish to explore in depth a particular subject area in Crime, Law and Deviance. In order to enrol, students must have attained an average of at least 70% in SOC courses. Students may take a maximum of 2.0 credits of independent studies. Prerequisite: SOC100H5/101Y5, 200Y5/(SOC221H5, 222H5), 307H5

3. Health Sciences Communication Major (Science) Program

Program Description and Rationale

The U of T Mississauga is revising its program with plans to phase out the Health Sciences Communication (HSC) Specialist program and introduce a HSC Major in the same area. This programmatic change will put more emphasis on HSC communication, both visual and written, and less on basic science. Our goal is to attract Life Science students to CCIT to broaden their expertise in communication. Opportunities for students upon completion include working in: the health-care industry, hospitals, non-profit organizations, pharmaceutical companies, public health, and media companies specializing in health sciences. Students could also continue their studies in education.

The interdisciplinary HSC Major begins in second year and focuses on health communication and explores the synergistic roles of visuals and text in print and new media. Through an understanding of theories of visual and written communication, students prepare health/medical/scientific communication material for the digital age by learning to develop visual and written instruments targeted to specific populations.

Learning Outcomes

Students should leave the program:

- understanding the theories of visual communication as they pertain to data visualization, image creation, human-computer interaction, graphic design, online course development, media evaluation, etc.
- having the ability to visually and verbally communicate health-related topics to a variety of target audiences.
- equipped to use basic technology to convey health, medical and scientific topics
- appreciating the importance of an interdisciplinary team in HSC
- equipped to take what has been learned and use it to succeed in the workplace and in everyday life.
- with an appreciation for the need for lifelong learning in the health-care communication field.

In the 8.0 credit Major, 2.5 credits or 5 HSC half courses are offered in years 3 and 4 and will be taught by faculty in Biomedical Communications (http://www.bmc.med.utoronto.ca/bmc/faculty.html). BMC faculty involved in the Major all teach in the Master of Science in Biomedical Communications (MScBMC) program. Full-time faculty include Jodie Jenkinson and Nicholas Woolridge. Part-time faculty include, Meaghan Brierley, Leila Lax, David Mazierski, Sharon Nancekivell, Brian Sutherland and Shelley Wall. Prof. will oversee the administration of the Major. No additional funding is required as all courses required for the Major have already been offered in CCIT. The 5 required HSC half courses will be offered every year.

Abstracts outlining the 5 HSC courses are included below and will hopefully give a clear picture of our objectives. Abstracts outlining the other required CCIT courses and Sheridan courses are listed on the CCIT website and in our calendar.

Program Requirements for HSC Major

Within an Honours degree, 8.0 credits are required including at least 3.5 at the 300/400 level. This program must be taken in combination with another major or two minors.

Enrolment is limited and highly competitive. Students must complete a minimum first year 4.0 credits with a CGPA never lower than 2.20 (average is set annually).

First Year (3.0 credits)	CCT100H5 History of Communication Technologies (SSc) CCT101H5 Contemporary Communication Technologies (SSc) PSY100Y5 Introductory Psychology (SCI) BIO152H5 Introduction to Evolution and Evolutionary Genetics (SCI) BIO153H5 Diversity of Organisms (SCI)
Second Year (1.5 credits)	1.0 credits from CCT202H5 Human Perception and Communication (SCI) WRI203H5 Expressive Writing (SSc) .5 credits from: CCT204H5 Design Thinking (SSc) CCT206H5 Law, Technology and Culture (SSc) CCT260H5 Web Culture and Design (SSc) VCC 201H5 Introduction to Visual Culture (HUM)

Third and Fourth Year (3.5 credits)	2.5 credits required: HSC300H5 Health Communication (SSc. SCI) HSC301H5 Introduction to Data and Information Visualization (SCI) HSC302H5 Introduction to Biocommunication Visualization (SCI) HSC401H5 Web-Based Health and Science Communication Design (SSc, SCI) HSC402H5 E-Learning Environments (SCI) 1.0 credits from: CCT307H5 Conversational Structures (SCI) CCT316H5 Human Communication and Advertising (SCI) CCT377H5 Applied perception: Image and sound processing (SCI) CCT380H5 Human-Computer Interaction and Communication (SCI)

Short descriptions of the 5 HSC required and presently offered courses:

HSC300H5: Health Communication (Wall & Nancekivell)

An introduction to the principles of communicating effective audience-specific health information in a variety of media, including electronic and print, and critical analysis of their content, form, and language. Students will learn the principles of clear, written health communications that serve the needs of lay and professional audiences, and apply these principles to various assignments, including the content of a website on a current health topic.

HSC301H5: Introduction to Data and Information Visualization (Woolridge & Jenkinson)

An introduction to the basic principles of information design, including the clear, concise and truthful presentation of data in the form of tables, graphs, maps, academic posters, presentations, and user interfaces. Topics will include the accurate representation of numerical and statistical data, information hierarchy, and appropriate use of design elements for clarity and legibility. Practical application of course material will require students to develop and integrate information graphics into a presentation format for peer review and critique.

HSC302H5: Introduction to Biocommunication Visualization (Mazierski & Wall)

An introduction to the principles of communicating effective, audience-specific health information in both print and electronic media. Students will learn to analyse the form, content, language, and imagery of written health communication; to locate the published research behind health reports in the popular media; and to communicate clear, accurate health information to medical professionals, general audiences, and readers with low literacy skills.

HSC401H5: Web-Based Health & Science Communication Design (Jenkinson)

An introduction to the principles of health and science communication, this course examines the characteristics of effective audience-specific media design. Included are issues of learning context, culture, and science literacy in the development of tools that

communicate concepts to either a professional or lay audience. Students will analyze existing media and design a website on a current health or science-related topic.

HSC402H5: E-Learning Environments (Brierley, Sutherland & Lax)

An introduction to design, development and evaluation of E-Learning courses for health sciences education or health-care practice. An overview of current Learning Management Systems, Learning Object Repositories and Learning Object design process will support individual or group projects. Focus is on effective communication expressed through multi-media/multi-modal

B) Deleted Programs

1. Minor and Major Programs in German Cultural Studies

The University of Toronto Mississauga's academic planning process aimed to achieve critical mass in areas of strength and potential growth. The Department of French German and Italian (FGI) at the U of T Mississauga currently has one faculty member in the German area but offers Major and Minor programs in German Cultural Studies. There have been low enrolments in German language and related courses beyond first year and despite best efforts of all concerned, there is no significant upward trajectory in enrolments. While the Faculty will continue to offer courses in German where demand warrants we cannot assign further resources to a Major or Minor program for which there appears to be little demand. FGI will take concrete steps by which the U of T Mississauga can assure the academic future of those students currently registered in the Major or the Minor, and give them every assistance in completing their degree requirements.

The process of consultation that preceded this decision began in 2003 with the Stepping Up planning process. At that time, in response to concerns raised by the Dean about student interest in the German Language and Literature program, the director of the program proposed a reconfiguration of our German offerings, replacing that program with a program in German Cultural Studies. In spite of the efforts of the department, this new program has not generated interest among students and has seen no growth at a time when many programs at the U of T Mississauga has seen dramatic growth.

The Faculty will of course enable the students currently enrolled in the program to complete their degrees. The one faculty member affiliated with the program will continue to teach in his area of research (German Cinema) in our Cinema Studies programs.

2. Specialist Program in English and History (Arts)

Currently only 10 students are enrolled in this program, and there is no reason or significant potential for it to grow. It is much more common (and useful) for students to do a Major in English and a Major in History. There is also the Canadian Studies Major, which allows students to combine English and History courses (and courses in other areas). Students in the program will be contacted individually and notified as soon as the program has been officially terminated. They will, of course, be able to complete their Specialist, since the requirements are fulfilled with regularly offered English and History courses.