1.0 ORGANIZATION AND PROGRAM INFORMATION

1.1 Submission Title Page

**Full Legal Name of Organization:** University of Ontario Institute of Technology

**Operating Name of Organization:** University of Ontario Institute of Technology

**Common acronym of Organization:** UOIT

**URL for Organization Homepage:** www.uoit.ca

**Degree Level and Type to be awarded for program or part of program:**
Honours Baccalaureate Degree in Forensic Science

**Proposed Degree Titles:**

Forensic Science

**Proposed Degree Nomenclature:** B.Sc. (Hons.) in Forensic Science

**Date of Submission:** October 28, 2004

**Location where program to be delivered:**
University of Ontario Institute of Technology
2000 Simcoe St. N
Oshawa, ON
L1H 7K4

**Contact Information:**

Persons responsible for this submission:

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Dean, School of Science
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Email: william.smith@uoit.ca
## Bachelor of Science (Honours) in Forensic Science - Nomination Table

<table>
<thead>
<tr>
<th>Name</th>
<th>Telephone Fax Email</th>
<th>Academic Credentials</th>
<th>Professional Designation</th>
<th>Nominee Accepted Nomination</th>
<th>At Arm's Length</th>
</tr>
</thead>
<tbody>
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<td>Yes</td>
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<tr>
<td>British Columbia Institute of Technology</td>
<td>Forensic Science Technology Program</td>
<td>3700 Willingdon Avenue Burnaby, British Columbia Canada V5G 3H2</td>
<td></td>
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<td>Forensic Science Technology Program</td>
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<td>University of Windsor Forensic Science Program</td>
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<td>PhD</td>
<td>Professor, Forensic Science Program</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>University of Windsor Forensic Science Program</td>
<td>401 Sunset Avenue</td>
<td>Windsor, Ontario Canada N9B 3P4</td>
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<td>Director of the Forensic Science Program Member, Northeastern Association of Forensic Scientists Fellow, American Academy of Forensic Science</td>
<td>No</td>
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</tr>
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<td>100 College Drive Allentown, PA 18104-6196</td>
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<td>Yes</td>
<td>Yes</td>
</tr>
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<td>707 Allen Hall Forensic &amp; Investigative Science West Virginia University Morgantown, WV 26506-6121</td>
<td></td>
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University Vision, Mission and Values

VISION

The University of Ontario Institute of Technology is an innovative and market-oriented institution, pursuing inquiry, discovery and application through excellence in teaching and learning, value-added research and vibrant student life.

MISSION

- Provide career-oriented undergraduate and graduate university programs with a primary focus on those programs that are innovative and responsive to the needs of students and employers.
- Advance the highest quality of research.
- Advance the highest quality of learning, teaching, and professional practice in a technologically enabled environment.
- Contribute to the advancement of Ontario and Canada in the global context with particular focus on Durham Region and Northumberland County
- Foster a fulfilling student experience and a rewarding educational (work) environment.
- Offer programs with a view to creating opportunities for college graduates to complete a university degree.

VALUES

Integrity and Respect
We will treat each other with dignity, including those with challenges.

Honesty and Accountability
Our actions reflect our values, and we are accountable for both.

Intellectual Rigour
We strive for excellence and challenge convention.
2.0 EXECUTIVE SUMMARY

Proposed Program Title:
Bachelor of Science in Forensic Science

Proposed Credential Nomenclature:
B.Sc. (Honours) in Forensic Science

Disciplines/Fields of Study:
Forensic Science

Is a work experience/work placement term required for degree completion?
Work experience is not required for degree completion, but work placements will be facilitated for interested students through the University’s Career and Employment Services Office.

Anticipated Program Start Date: September 2005.

Description of the Proposed Program and Program Strengths

The Faculty of Science proposes to offer an Honours BSc program in Forensic Science. Forensic Science is an emerging interdisciplinary area of science that also includes some elements of social science, and which involves the use of scientific principles to analyze evidence for legal investigations. The program map is provided at the end of this section. The program provides a strong scientific base in biology and chemistry in the early years, and forensics courses in the upper years that utilize this knowledge base, in addition to several courses with social science underpinnings.

One of the greatest strengths of the program is its strong science-based core, emphasizing in-depth study in biology and in chemistry. The first year of the program has 2 courses in each of biology, chemistry, calculus, and physics. This provides students with a basic grounding in the core science disciplines, both in order to
prepare them for future scientific developments in any area they choose to pursue (which will almost surely involve different areas of science), and also to provide the flexibility for selecting different scientific specializations in the upper years of study. By an appropriate selection of elective courses during their program, students may acquire deeper knowledge of either chemistry or biology, providing them with opportunities inherent in typical programs in these areas, including post-degree and graduate studies.

Admission and graduation requirements are, in general, the same as those in place for UOIT's existing Science degree programs. In view of the anticipated popularity of the program and the resource implications, involving laboratories in particular, a limited number of students will be allowed to continue in the second and subsequent years of the program. This will be accomplished by requiring an appropriately high GPA at the end of the first year of study.

We note that there currently exists a very small number of forensic science programs offered by Canadian universities. (We are aware of only 4 – at Laurentian, Trent, University of Toronto at Mississauga, and University of Windsor.) In contrast, in the United Kingdom, over 400 university programs have “forensic” in the title; there has been a dramatic increase in such programs in the past 4 years. The abundance and popularity of such programs speaks to meeting a strong student demand for programs with an applied orientation.

The emphasis of existing forensics programs (both in Canada and the UK) ranges from social science to various particular aspects of biology or chemistry; all of these programs incorporate aspects of legal studies. The “science” aspect of many of these programs is not particularly strong. We believe that the proposed UOIT program, by
means of its emphasis on a strong and broad-based science core and the incorporation of in-depth studies in both biology and chemistry, will fill a unique niche for students wishing to study basic science with the added advantage of the incorporation of a particular application area in courses in their upper-year studies. In addition to possessing a good basis for employment in the forensic science sector, we expect that graduates of the proposed program would also be well-equipped to pursue studies in programs available to graduates of any Canadian university program in biology or chemistry, given an appropriate selection of elective courses emphasizing one or the other area. This includes post-degree studies in areas such as medicine, or graduate studies.

Program Learning Outcomes and Curriculum Design

The program is an interdisciplinary one, cutting across biology, chemistry, and areas of social science. As indicated by the program course map provided at the end of this section, the program includes 19 science courses which are also taken by students in other UOIT science programs. A further 8 forensics-related courses are science-based (in chemistry and biology), and 5 additional courses are based fully or primarily in social science, 4 of which are new. The remaining 8 courses filling out the remainder of the program are electives, including the course Collaborative Leadership, which is common to most UOIT programs.

The program design incorporates a broadly-based set of basic science core courses in the first year of study in chemistry, biology, physics, and calculus. This set of first-year courses is similar to that in other UOIT science programs. As noted previously, this core provides a flexible foundation for further studies in any science program at the second year, and provides a set of core knowledge in each of the main areas of
science, all of which are expected to play a role in the increasingly multidisciplinary orientation of science in the future.

The Forensic Science program incorporates more specialized science courses in chemistry and biology in the second and third years of study. The courses in the program emphasizing forensic science itself begin with one course in the first year of study, followed by one course in the second year and a related foundation course in psychology, and culminate with a set of ten specialized forensic science-related courses in the third and four years. In this way, a firm scientific background is first acquired in biology and in chemistry, the core sciences underpinning forensic science, followed by specialized upper-year courses applying this knowledge.

**Capacity to Deliver - Resource Requirements**

By building upon 27 existing courses, including 19 already offered by Science, 1 by Social Science and 7 elective courses, the program is very resource-efficient, and builds upon UOIT’s existing strengths.

The program requires 13 new courses; 12 of these are specifically forensic science-related and 1 is a new course in physical chemistry for the biosciences; this latter course can also be utilized as an elective by students in other Science programs. Of the 13 new courses, 11 of these will be delivered by the Faculty of Science:

- Introductory Forensic Science
- Crime Scene Science
- Criminalistics
- Physical Chemistry for Biosciences
- Forensic Biology
- Forensic Chemistry
- Forensic Practice
- Forensic Medicine
- Drug Chemistry and Toxicology
- Research Project in Forensic Science
- Advanced Topics in Forensic Science

It is anticipated that the remaining 2 new proposed courses will be delivered largely by faculty in Social Science. These courses are: Forensic Psychology and Law for Forensic Scientists.
At steady-state, the new courses require 3.25 additional full-time faculty members (based on a teaching load of 4 courses per year). 2.75 Science faculty are required to deliver the science-based courses, and the remaining 0.50 full-time faculty requirement will be based in Social Science, with joint appointments in Science being a possibility. Practitioners in the field will be invited to contribute to the program as guest lecturers, offering students first-hand exposure to the practical applications and challenges of the various sub-fields of forensic science and reinforcing its interdisciplinary nature.

Laboratory requirements are expected to be relatively modest, in view of the enrolment limitations that will be imposed. Most of the physical laboratory facilities already existing for the UOIT biological science and chemistry programs can be utilized. Additional laboratory space will be needed for the second-year Crime Scene Science course, in the form of a small house or unused building space. This will be fitted out with simulated crime scene furnishings, which are not expected to be expensive. It will also be necessary to acquire a location for vehicles to simulate vehicle-related crime scenes. Specialized laboratory equipment will also be required in the Science laboratories.

**Projected Enrolment and Faculty Growth**

Projected steady-state intake is 48 students per year, with a steady-state total of 192 students; if resources permit, this number may be increased. Due to its expected popularity with students, based on the experience with similar programs in the UK, the steady-state enrolment is expected to be achieved immediately in the year the program is first offered. Places will be made available, as required, at the beginning of second and higher years to maintain the total cohort at 48 students in each year.
The projected faculty growth supporting the program is given in the following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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<tr>
<td>New Science Faculty</td>
<td>1</td>
<td>1</td>
<td>0.75</td>
<td>0</td>
</tr>
<tr>
<td>New Social Science Faculty</td>
<td>0</td>
<td>0</td>
<td>0.50</td>
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**Program Support/Recognition from Profession**

UOIT consulted with members of the forensic science profession, including agencies of the provincial government and police organizations, during the development of this program proposal. (See Section 9.2) The Faculty of Science intends to form an ongoing Advisory Committee comprised of representatives from these bodies and from federal agencies.

**Careers in Forensic Science**

A career in forensic science is becoming more demanding and professional as technology and forensic science techniques are used more broadly, in a variety of contexts. Potential employers of forensic science graduates may include: forensic laboratories, police services, insurance and fraud investigation industries, immigration services, customs & excise agencies, federal, provincial and regional government, medical examiner/coroner offices, private companies, colleges and universities.
University of Ontario Institute of Technology

This proposed program has been designed to develop key knowledge, skills and practical training which provide graduates with a range of employment opportunities outside forensic science, including research, management or teaching in other areas of science in both the public and private sector.
# Program Map - BSc (Hons) in Forensic Science

<table>
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<tr>
<th>Year-Sem.</th>
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<td>Chemistry I CHEM1010U</td>
<td>Biology I BIOL1010U</td>
<td>Physics for BioSciences I PHY1030U</td>
<td>Calculus I MATH 1010U</td>
<td>Scientific Computing Tools CSCI1000U</td>
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<td>Biology II BIOL1020U</td>
<td>Physics for BioSciences II PHY1040U</td>
<td>Calculus II MATH1020U</td>
<td>Introductory Forensic Science FSCI 1010U</td>
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<td>Biochemistry BIOL2040U</td>
<td>Genetics and Molecular Biology BIOL2050U</td>
<td>Human Anatomy BIOL2050U</td>
<td>Introductory Psychology PSYC1000U</td>
<td>Organic Chemistry CHEM3020U</td>
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<td>3-1</td>
<td>Analytical Chemistry CHEM2030U</td>
<td>Principles of Pharmacology and Toxicology BIOL 3020U</td>
<td>Physical Chemistry for BioSciences CHEM3140U</td>
<td>Criminalistics FSCI3010U</td>
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<td>4-1</td>
<td>Forensic Psychology FSCI4010U</td>
<td>Forensic Medicine FSCI4020U</td>
<td>Drug Chemistry and Toxicology FSCI4030U</td>
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<td>Elective*</td>
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<td>Research Project in Forensic Science FSCI4400U</td>
<td>Law for Forensic Scientists FSCI4050U</td>
<td>Advanced Topics in Forensic Science FSCI4060U</td>
<td>Elective*</td>
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</table>

*Students are required to take 4 science electives and 3 liberal studies electives, including Collaborative Leadership.

The 12 new Forensic Science courses are shaded.

There is also one new Chemistry course - Physical Chemistry for BioSciences (3,1)
3.0 PROGRAM ABSTRACT

3.1 Program Abstract

Forensic Science is an emerging interdisciplinary area of science that involves the use of scientific principles to analyze evidence for legal investigations. UOIT's proposed BSc in Forensic Science provides students with a strong science-based core, emphasizing in-depth study in biology and chemistry. These subjects are essential to students' understanding of different techniques used to gather and analyze evidence. Forensic Science draws on a range of specialist areas, including forensic investigation and practice, forensic biology, forensic chemistry, forensic medicine (including forensic pathology and anthropology), and drug chemistry and toxicology. In addition, the program draws from related subjects in the social sciences such as psychology and law. The program aims to provide students with a broad understanding of the discipline through exposure to all these aspects of Forensic Science and a clear understanding of how these specialist fields interact.

The program's early years provide a foundation in the core science disciplines, offering flexibility to students who may wish to select different scientific specializations in the program's upper years. The program's strong biology content allows students so inclined to consider post-graduate opportunities in that area.
4.0 PROGRAM DEGREE LEVEL STANDARD

4.1 Program Degree Level Standard Summary

The curriculum for this proposed program has been designed to develop in learners the required knowledge, skills and attributes necessary for the honours baccalaureate degree as defined by the Post-Secondary Education Quality Assessment Board. A systematic process was conducted to develop this program, with input from well-qualified academic consultants from the United Kingdom and from forensic science practitioners in Ontario. Highly qualified faculty have been and will be hired to deliver the program's curricula in interesting and challenging ways and to ensure that students are exposed to knowledge at the forefront of the discipline.

The Bachelor of Science in Forensic Science offers a logical progression of concepts from general to complex, making increasing demands on students to use higher level thinking skills and to take greater responsibility for their own learning.

The courses in this undergraduate curriculum have been planned to provide students with a sound foundation in the theory and application of the principles of biology, chemistry and forensic science, along with practical skills in the conduct of laboratory experiments and examinations and the analysis and management of data.

Appropriate supporting courses have been chosen from mathematics and the sciences to provide a broad basic understanding of the different branches of science and fundamental knowledge and skills to apply to subsequent courses in the discipline of forensic science.
All courses have been designed to help students develop an understanding of theory, current research and practice. As students engage in the study of the fundamental science and mathematics courses, courses in their core discipline and additional liberal studies electives, they gain an awareness of inter-relationships among subjects and disciplines and acquire a set of practical skills necessary for the study and application of knowledge.

**Depth and Breadth of Knowledge in the Field**

The proposed program has been designed to provide students with a strong science-based core, emphasizing in-depth study in chemistry and biology. The early years provide students with a basic grounding in several core science disciplines; this offers flexibility to students who may wish to select different scientific specializations in the program's upper years. With an appropriate selection of science electives, students can prepare for graduate study in biological science.

The main purpose of the proposed program is to enhance knowledge, understanding and application of forensic science and criminal investigation. Forensic Science is a multi-disciplinary subject which draws on the experience of a range of specialist areas, including forensic investigation and practice, forensic biology, forensic chemistry, and forensic medicine (including forensic pathology and anthropology) and provides students with an understanding of how these specialist fields interact. Although it is more common for practicing forensic scientists to specialize in one of these sub-disciplines, it is critical that they understand the roles of their specialist colleagues. This program aims to provide students with a broad understanding of the subject through exposure to all these aspects of forensic science.
The early years of the program focus on providing a solid foundation of knowledge and skills in the subjects underpinning forensic science, notably biology and chemistry. This foundation is essential to students’ understanding of different techniques used to gather and analyze evidence. In their first year, students enroll in a course which introduces them to the study of forensic science and exposes them to the specialist areas upon which later courses will focus. In this introductory course, students explore ways in which a forensic case is investigated at both the crime scene and in the laboratory. *Crime Scene Science*, in the program’s second year, introduces students to simulated crime scenes. Students examine the range of techniques used to gather and evaluate evidence for analysis in the laboratory. Lectures and tutorials are used to present the theories behind the techniques used at the crime scene, as well to introduce legal and practical aspects of crime scene processing and management.

The second half of the proposed program explores the processes and techniques of forensic investigations in greater depth. Students explore the application of key concepts, principles, tools and techniques related to the sub-disciplines of forensic science - biology, chemistry, pathology and anthropology, drug chemistry and toxicology and psychology. *Criminalistics* introduces students to case studies and simulations and engages them in the analysis of different types of evidence. It also provides students with practice in the written preparation and oral presentation of laboratory and court reports. *Forensic Practice* provides students with hands-on opportunities to apply the techniques learned in the forensic science courses to more advanced and complex simulations of crime scenes. The fourth year course *Advanced Topics in Forensic Science* builds on techniques covered earlier in the program and requires students to compare and critically evaluate the use, strengths and limitations of such techniques in forensic cases. In addition, students explore emerging developments and issues in the analysis, interpretation and critical
evaluation of forensic evidence. During the final year's Research Project in Forensic Science, students carry out independent work under the guidance of individual professors or external forensic science personnel. This provides them with the opportunity to integrate and synthesize knowledge gained throughout their program of study.

Through presentations by forensic practitioners and specialist speakers, case study assignments and laboratory simulations, students gain understanding of ways in which scientific knowledge and techniques support the analysis of evidence and in which forensic scientists can assist investigating teams to build a more detailed picture of the crime. These delivery methods strengthen students' understanding of the multi-disciplinary nature of forensic science.

In addition to acquiring specialized knowledge in the discipline, students must develop the skills necessary to participate in forensic investigations. They must be informed about the vocabulary, tools and techniques of the discipline and skilled in selecting and using appropriate equipment and methods to gather, transport, analyze and manage evidence. They must demonstrate curiosity and patience in order to carry out the meticulous examination of potential evidence.

The role of a forensic scientist includes the presentation of scientific evidence in court. In order to fulfill this role, graduates must have some understanding of the criminal law system and how the courts work. This is provided in the fourth year course, Law for Forensic Scientists. Specialized scientific knowledge and expertise, coupled with an understanding of the rules of evidence that govern the admissibility of opinions and conclusions, prepare graduates to assume the roles of expert witnesses.
This proposed program has been designed in consultation with academics and individuals involved in the study and use of forensic science. These individuals reviewed and commented on the outcomes, design and delivery methods of individual courses and the program as a whole. The Dean of Science plans to form a program advisory committee with representatives from academia, forensic service organizations, police and other related services. Consultation with knowledgeable stakeholders has and will continue to provide the University with a unique insight into the strengths and challenges of the discipline and to ensure that the program maintains its quality and relevance.

**Depth and Breadth of Knowledge Outside the Field**

Exposure to the distinctive assumptions and modes of analysis of other disciplines are provided in a number of carefully chosen breadth courses that are interspersed throughout the four years of the program. These courses emphasize oral, written, technological and interpersonal communication skills, promote a broader understanding of the needs of society, and contribute to the development of citizens with well-rounded educations. They expose students to social, political, economic, cultural and ethical dimensions that will inform their decisions as professionals in the workplace. Students may select from a wide variety of elective courses from other UOIT faculties and from Trent University courses offered at the UOIT campus. (See Section 6.)

*Collaborative Leadership* is a course taken by all students in all programs at UOIT. It focuses students’ learning on topics related to interactions with others in personal, educational and professional contexts and supports the development of critical employability skills such as team work, leadership, project management, communication skills and intercultural understanding. In this course, students engage
in collaborative learning activities involving direct and practical application of the content/skills critical to professional success. These activities will be directed toward: developing leadership for exceptional performance, obtaining commitment to goals and standards, negotiating and resolving conflict, understanding inter-cultural communications, engaging in ethical practice, and relating with others in team environments.

**Conceptual and Methodological Awareness**

Most of the core science courses require students to use techniques of analysis and enquiry in order to complete assignments and projects and to participate in laboratory activities. Students investigate, critique, and apply current research as part of many course requirements, culminating with an independent Research Project in the program's final year.

The work of forensic scientists is primarily that of solving problems. The program prepares students to use a variety of techniques to isolate, gather and evaluate evidence, to use current scientific techniques to analyze its meaning and usefulness in the context of the problem, and to justify whether or not it contributes to the solution of the problem. Students are expected to defend the validity of their findings and to clearly identify the connection between the results of their analysis and the case/problem to be solved.

Every student enrolled in the program is required to lease a laptop computer with wireless capability. UOIT will provide the infrastructure for wireless access to the Internet. The use of the technology is an integral part of teaching and learning at the University, offering users a distinct advantage. Students become comfortable and
confident using technology to solve problems, access information and research
topics, prepare written submissions and multi-media presentations, and communicate
with faculty, peers and professional organizations. The ability to use technological
tools competently enables students to maintain currency and engage in ongoing
professional development after graduation.

Forensic scientists engage in thorough scientific investigations in an attempt to make
clear connections between evidence and crime. Throughout the program, students
are expected to present their findings in unbiased and professional ways, and to
justify their opinions on the basis of professional knowledge and scientific testing.
The nature of the practice is such that forensic scientists expect their interpretations
to be challenged, and their arguments must be well prepared, articulate and
objective. Students are required to demonstrate that they are able to adjust the style
and content of their communication to reflect the needs of their audiences. It is
especially important that they be able to express technical details in ways that can be
understood by non-scientist attorneys, juries and judges.

**Analytical Skill**

Forensic Science is a highly analytical field. Students in the program are required to
critically evaluate and use data (evidence), both qualitative and quantitative, to solve
problems. They are expected to apply the concepts, principles and techniques of the
discipline to case studies and simulations of crime scenes. It is essential that
students work safely, accurately and precisely in the lab environment to examine
material. In that venue, students must select which equipment and techniques are
most appropriate for the analysis, interpretation and integration of the particular
forensic evidence. They are taught and expected to use basic statistical methods to
assess and communicate laboratory results. They learn to draw conclusions from the qualitative and quantitative findings and to determine the extent to which these findings constitute valid and useful evidence.

Application of Knowledge

A strong science base is essential for the practice of forensic science. The early years of the program provide a solid foundation of knowledge and skills in the subjects underpinning forensic science, notably biology and chemistry. This foundation is essential to students' understanding of different techniques used to gather and analyze evidence. In the program's third and fourth years, students study the specialized techniques used at the crime scene as well as legal and practical aspects of crime scene management.

Learning experiences in the program require students to apply their scientific knowledge and technical skills to the analysis of evidence and the solution of increasingly complex problems (cases). Simulations introduce students to scenes of crime; from these, they observe and collect data and samples which may or may not support the investigation. Students select appropriate techniques to critically evaluate the materials, interpret the results and determine if and how their conclusions might contribute to the investigation and solution of the crime.

Throughout the program, students are expected to use a variety of resources, including scholarly reviews and primary research sources, to extend their knowledge of various aspects of the discipline. Individual and team projects, laboratory exercises, problem-based learning activities, case study analyses and crime scene simulations provide students with opportunities to consolidate, extend and apply what
they have learned. In their final year of study, students undertake a research project in Forensic Science, providing them with the opportunity to demonstrate the maturity of their knowledge and skills in the discipline.

**Professional Capacity/ Autonomy**

As they proceed in the program and are expected to meet increasingly rigorous academic standards, students take responsibility for managing and directing their own learning. Individually and as part of groups, they conduct projects that require them to organize their time and manage their workload efficiently to meet clearly defined standards of performance and expected deadlines.

Forensic scientists work with a variety of other professionals, including police officers, prosecuting and defense attorneys, immigration workers, and crime scene investigators. The ability to work effectively as a team member is as important as the ability to initiate and complete tasks independently and competently. Team assignments are an integral part of the program.

The program has been carefully designed to ensure that students understand the roles and responsibilities of the profession. They acquire the skills to keep accurate records, maintain stringent quality control and manage data effectively. They must demonstrate that their examinations are complete, laboratory tests are performed correctly, and the interpretation of data is thorough and objective. They are expected to appreciate and conform to the high ethical standards expected of forensic scientists.

Students are required to develop the ability to select, evaluate, and incorporate scholarly sources of information into planned learning activities, assignments and
projects. The emphasis on the integration of technology into delivery methods, learning activities, assignments and presentations ensures that students in the program develop competence with the use of the technology to acquire, manage and use information to support their learning in the university environment and in their roles as professionals and lifelong learners.

Graduates of the program may eventually assume positions of leadership in professional or educational settings, or in public service or volunteer organizations. In order to develop essential skills for leadership, students explore leadership and employability skills in the Collaborative Leadership course. When partnered with depth and breadth of knowledge in science, and, more specifically, forensic science, graduates develop skills and attitudes that contribute to effective decision making in complex and unpredictable circumstances and that can be applied in both personal and professional contexts.

**Communications Skills**

Forensic scientists can offer expert testimony by sharing scientific knowledge and providing facts about scientific equipment and tests. They may be called upon to offer expert opinions based on their analysis and interpretation of tangible evidence. These opinions must be free from bias and offered only if they are based on scientific facts and informed by key concepts and techniques of the discipline. Written reports must be clear, concise and accurate. Oral testimony must also be complete and truthful. All communications must be free from scientific jargon and easily understood by laypersons and professionals outside the discipline. The program provides many opportunities for students to develop and refine their oral and written
communication skills to ensure that they are well prepared for this aspect of their role.

As part of the learning activities in science and elective courses, students learn and use the key language, terminology and communication styles needed to dialogue with expert and other stakeholders. Formal and informal presentations, along with written assignments and technical reports, further develop students' abilities to communicate information, ideas, problems and solutions to professors, peers, specialist and non-specialist audiences.

**Awareness of Limits of Knowledge**

Forensic scientists apply their knowledge and skills in the examination of evidence in order to arrive at the truth. Students learn to appreciate that their individual contributions support this aim but that the collective efforts of a team of specialists in different sub-disciplines of forensic science are essential to create the most complete picture of the case or crime scene.

The evidence gathered at crime scenes is often incomplete; many factors influence its validity in relation to the case in question. Different types of evidence are more difficult to analyze; certain tests and techniques are more reliable than others. Evidence can be contaminated and invalidated through the use of incorrect procedures. The most meticulous testing can fail to provide sufficient data to provide a connection between the collected material(s) and the case. Ongoing scientific and technological advances continue to shape the ways in which forensic scientists carry out their work. Graduates must be prepared to participate in ongoing professional development to keep abreast of current trends and techniques. The program exposes students to a variety of guest specialists with relevant professional
experience; these external resources reinforce the challenges and limitations of professional practice.
5.0 ADMISSIONS, PROMOTION, GRADUATION STANDARD

5.1 Program Admission Requirements

It is the policy of UOIT to encourage applications from individuals who possess appropriate qualifications for admission, including Aboriginal candidates, members of visible minorities, and individuals with special needs and abilities.

<table>
<thead>
<tr>
<th>Program Admission Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic</strong></td>
</tr>
<tr>
<td>12U English</td>
</tr>
<tr>
<td>12U Advanced Functions and Introductory Calculus</td>
</tr>
<tr>
<td>2 grade 12U credits from: Biology, Chemistry, Physics, or Geometry &amp; Discrete Mathematics</td>
</tr>
<tr>
<td>2 additional 12U or 12U/C credits</td>
</tr>
<tr>
<td>Applicants will be required to have a minimum 70% overall average. A combined minimum average of 70% is also required in the mathematics and science courses.</td>
</tr>
<tr>
<td><strong>Language Proficiency Test</strong></td>
</tr>
<tr>
<td>All applicants are required to give evidence of their oral and written proficiency in English. This requirement can be satisfied with one of the following criteria:</td>
</tr>
<tr>
<td>- Their mother tongue or first language is English. OR</td>
</tr>
<tr>
<td>- They have studied full time for at least three years (or equivalent in part-time studies) in a university where the language of instruction and examination was English. OR</td>
</tr>
<tr>
<td>- They have achieved the required proficiency on one of the tests in English language acceptable to UOIT.</td>
</tr>
</tbody>
</table>

5.1.2 Admission Policies and Procedures for Mature Students

The following is an excerpt from the Office of the Registrar, Policies and Procedures Section 2.4.

**Mature students**

Applicants who do not hold the published admission requirements may be considered for admission if:

i) they are at least 21 years of age in the calendar year of registration

ii) they are Canadian Citizens or Permanent Residents of Canada or Convention Refugee claimants

iii) they have been away from post-secondary studies for a minimum of 2 years.

As the University of Ontario Institute of Technology offers specialized programs requiring proficiency in prerequisite subjects, mature students must be able to demonstrate the capacity to succeed in such programs. Evidence of such ability may include, for example, academic upgrading, work experience and/or scores on standardized tests such as the SAT.
5.1.3 Credit Transfer/Recognition Policies

The following excerpts from the Office of the Registrar, Policies and Procedures (Sections 2.2, 2.3 and 2.5) apply to this requirement.

Non-Ontario applicants

Applicants from outside of Ontario apply through the Ontario Universities’ Applications Centre (OUAC). See www.ouac.on.ca for information. Applicants seeking information on the applicability of their educational backgrounds may seek informal guidance from the Admissions Office if their circumstances are straightforward. Applicants wanting a formal assessment of their credentials prior to application should contact a credential evaluation service. Official determination of admissibility and transfer of credit cannot be made until the point of application.

Applicants from other Canadian provinces

Specific information on admissions requirements for students completing high school in other provinces is available from the Admissions Office. The normal minimum requirement is completion of Grade 12 with a minimum overall average of 70%. Quebec applicants must have one year beyond the Secondary V diploma. Equivalent subject prerequisites will apply to out-of-province applicants.

Applicants from the United States

The requirement is high school graduation with a minimum C average. All applicants must present an SAT or an ACT score; a minimum combined SAT score of 1200 or an ACT score of 27 is recommended.

Applicants from British-patterned education (GCE)

The minimum requirement is the General Certificate of Education, including a minimum of two Advanced Level courses. No grade can be below a ‘C’.

Applicants from other countries

Applicants from other countries should be in contact with the Admissions Office for information.

International Baccalaureate students

Full diploma candidates who achieve passes in six subjects with at least three at the Higher Level, and who accumulate a grade total of 24 with no score lower than 4 are eligible for admission to first year. Students must hold the appropriate prerequisite subjects at the Higher Level. English may be held at either Higher or Standard Level. Applicants offering prerequisites at Standard Level will be given individual consideration. See Section 2.6 for information on Advanced Standing.

Students transferring from other Universities

Credits from other Ontario universities will be recognized in a student’s program as appropriate, subject to the residency requirement (see Section 6.x). The same practice will apply to other Canadian degree-granting universities and accredited American institutions. Credits from universities in other countries will be evaluated individually.
Applicants from Colleges of Applied Arts and Technology or Equivalent

Applicants from Colleges of Applied Arts and Technology or equivalent will be considered for admission and advanced standing. Admission prerequisites and program requirements will be the major factors in determining such decisions. Faculties may have specific policies in this area.

The following are general guidelines concerning admission and maximum advanced standing. These guidelines may be superseded by Academic Council-approved college-university articulation and/or bridging programs which specify block transfer credit or advanced standing.

Graduates of a 3 year college program with a minimum average grade of B (70%) will be considered for admission and normally may be granted up to a maximum of 45 credit hours (1.5 years). Graduates of a 2 year program, or students having completed 2 years of a 3 year program with a minimum average grade of B (70%) will be considered for admission and normally may be granted up to a maximum of 30 credit hours (1 year). Graduates of a 1 year program with a minimum average grade of B (70%) will be considered for admission but are not normally eligible for advanced standing.

Advanced standing will be determined by the admitting faculty based on equivalence of the courses in question to core or elective requirements and any professional accreditation requirements. A student must achieve a minimum grade of B in any course being submitted for advanced standing consideration. Students should request advanced standing at the time of application by submitting an official transcript and course outlines.

5.1.4 Advanced Placement Policies

Advanced standing based on courses taken in high school

Applicants who have completed Advanced Placement (AP) or International Baccalaureate (IB) examinations may be granted up to a maximum of 18 credit hours toward their University of Ontario Institute of Technology degree. Other university-level courses taken while in high school/secondary school will be considered on case-by-case basis. Official documents must be supplied directly from the issuing institution to the Admissions Office to ensure granting of credit. Minimum subject scores of 4 in the Advanced Placement Examinations and 5 in the International Baccalaureate examinations are required for advanced standing.

Credit and exemption will not be given for completion of high school International Baccalaureate or Advanced Placement courses unless an acceptable score is attained on the examination administered by the appropriate board.
## 5.2 Promotion and Graduation Requirements

<table>
<thead>
<tr>
<th>COURSE TYPE</th>
<th>PROMOTION</th>
<th>GRADUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses in Disciplines Outside the Main Field(s) of Study</td>
<td>GPA of 2.0 (63-66%)</td>
<td>GPA of 2.0 (63-66%)</td>
</tr>
<tr>
<td>Courses in Disciplines Within the Main Field(s) of Study</td>
<td>GPA of 2.0 (63-66%)</td>
<td>GPA of 2.0 (63-66%)</td>
</tr>
<tr>
<td>Overall</td>
<td>GPA of 2.0 (63-66%)</td>
<td>GPA of 2.0 (63-66%)</td>
</tr>
</tbody>
</table>
Assigning Letter Grades

Final grades for all courses will be submitted to the Registrar on a letter grade scale. The following descriptions outline the quality of work for which each letter grade should be awarded. Percentage to grade equivalencies are included as a guideline for conversion.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>90-100</td>
<td>Excellent. Strong evidence of originality and independence of thought; good organization; capacity to analyze and synthesize; superior grasp of subject matter with sound critical evaluations; evidence of extensive knowledge base; an outstanding ability to communicate.</td>
</tr>
<tr>
<td>A</td>
<td>85-89</td>
<td>Good. Substantial knowledge of subject matter; some evidence of organization and analytic ability; a moderate degree of originality and independence of thought; reasonable understanding of relevant issues; evidence of familiarity with literature; an ability to communicate clearly and fluently.</td>
</tr>
<tr>
<td>A-</td>
<td>80-84</td>
<td>Adequate. Student is profiting from his/her university experience; an acceptable understanding of the subject matter; ability to develop solutions to simple problems in the material; some ability to organize and analyze ideas; an ability to communicate adequately.</td>
</tr>
<tr>
<td>B+</td>
<td>77-79</td>
<td>Marginal. Some evidence that critical and analytic skills have been developed; rudimentary knowledge of the subject matter; significant weakness in the ability to communicate.</td>
</tr>
<tr>
<td>B</td>
<td>73-76</td>
<td>Inadequate. Little evidence of even superficial understanding of subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature; failure to complete required work; an inability to communicate.</td>
</tr>
</tbody>
</table>
6.0 PROGRAM CONTENT STANDARD

6.2.1 Current Professional/Accreditation or Other Requirements

In Canada, there are no professional regulatory bodies that govern the development and implementation of a program of this nature.

The American Academy of Forensic Sciences (AAFS) is a professional body in the United States established to promote education for and research in the forensic sciences; to encourage the study, improve the practice, elevate the standards, and advance the cause of the forensic sciences; to promote interdisciplinary communications; and to plan, organize, and administer meetings, reports, and other projects for the stimulation and advancement of these and related purposes.

In 1999, the National Institute of Justice (NIJ) published an assessment of forensic sciences entitled *Forensic Science: Review of Status and Needs*, in which it described the educational and training needs of the forensic science community as “immense.” Among the recommendations contained in the report was the establishment of the following:

- National standards for education in forensic sciences,
- An independent, community-wide, consensus-building, standard-setting body such as a technical working group for education in forensic sciences, and
- An accreditation system for forensic science education programs.

In 2004, the Forensic Science Education Programs Accreditation Commission (FEPAC) became an official standing committee of the AAFS. Its mission is to maintain and enhance the quality of forensic science education through a formal evaluation and accreditation system for college-level academic programs that lead to a baccalaureate or graduate degree.

(From: www.aafs.org.)

UOIT’s proposed program largely conforms to the draft undergraduate curriculum recommendations of the FEPAC Pilot-2003 Accreditation Standards document.

The Canadian Society of Forensic Science (CSFS) is a non-profit professional organization incorporated to maintain professional standards, and to promote the study and enhance the stature of forensic science. Membership in the society is open internationally to professionals with an active interest in the forensic sciences. It is organized into sections representing diverse areas of forensic examination: Anthropology, Medical, Odontology, Biology, Chemistry, Documents, Engineering and Toxicology. Members have access to meetings, workshops, and a variety of publications and resource materials. (www.csfs.ca) Students are eligible to apply for membership as well.

Unlike its American counterpart, this Society does not have a prescribed set of standards or an accreditation system for undergraduate programs in the discipline.
6.2.2 Letters of Support: Professional/Accreditation or Other Requirements

UOIT consulted with members of the forensic science profession, including agencies of the provincial government and police organizations, during the development of this program proposal. Their comments about the proposed program are included in Section 9.2.

On the page that follows is a letter of support for the program from Detective-Sergeant H. Curwain, of the Forensic Identification Unit of Durham Regional Police. Additional details regarding Dr. Smith’s consultation with Mr. Curwain are referenced in Section 9.2.
To: William R. Smith PhD                               Date: 25 October 2004
Dean of Science                                     University of Ontario Institute of Technology

Sir,

I have received your “Executive Summary” of your proposed, Bachelor of Science in Forensic Science degree program. I have asked my two top forensic investigators Detective’s Tom Melnick and John VanSeters to review the outline and give their opinions on the program. They have both advised that they find your intended program to be very good and stronger on science compared to other programs they have seen. It offers in-depth training and education into biology and chemistry. They both feel that this program will be an exceptional base for a graduate to continue into a more advanced area of forensic science.

The program would clearly provide the required education level for a person to have if they were to become a laboratory technician. Their training in the forensic, court and crime scene aspects would clearly suit them for a police or similar type laboratory facility. On this note the writer currently envisions that with the increase demand on Police Forensic Identification Units that the current practice of having only police officers trained at police academies conduct forensic work may soon have to change. I envision that there will be a future increase in demand for civilian laboratory technicians to support sworn forensic investigators as an alternative to current practices. This program would certainly be a requirement if such a change in processes were to occur. It is my intention to continue with this endeavour at the next Provincial Forensic Advisory Committee meeting being held at the Ontario Police College in November of this year.

In conclusion I fully believe you have developed an exceptional program and taking the time to seek out advice and guidance from potential stakeholders was an excellent concept. You should be congratulated for your efforts. I look forward to working with you in the future.

Respectfully

Det/Sgt Herb Curwain
Office in Charge
Forensic Identification Unit
Durham Regional Police
6.3 Program Comparison Statement

The applicant has on file and available upon request the research undertaken to complete Appendix 6.3. The applicant found that there are not more than five similar or related existing programs offered at Ontario universities and that there are three similar or related existing programs offered at universities in other jurisdictions that could have been included in appendix 6.3.

Program Comparisons - Ontario Universities

<table>
<thead>
<tr>
<th>Institution: Laurentian University</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Name and Credential:</strong></td>
</tr>
<tr>
<td>Bachelor of Science (Honours) with a Forensic Biology Option</td>
</tr>
<tr>
<td>Bachelor of Science or Bachelor of Arts with Forensic Anthropology Option</td>
</tr>
<tr>
<td><strong>Program Description:</strong> The Department of Biology at Laurentian University is the first in the country to offer a Forensic Biology Option within its Bachelor of Science Honours program. This option is designed to provide students with a solid education in the area of Biology while placing these studies in a forensic context.</td>
</tr>
<tr>
<td>Fifteen (15) spaces have been allotted to incoming students who wish to enter the Forensic Biology Option directly from High School. In order to be considered for one of these places, students must have at least an 85% average of their best six Grade 12 courses, while fulfilling Laurentian University's entrance requirements to an Honours Bachelor of Science degree. The top 15 students will be admitted to the Forensic Biology Option. These students must maintain at least a 70% average in the required first-year courses in order to maintain their spot in the second year of the Option.</td>
</tr>
<tr>
<td>Students not admitted to the Option in the first year may follow the application procedures at the end of their first year in order to be considered for admission to the second year. Students must have an overall average of 70% in the first-year required courses in order to apply.</td>
</tr>
<tr>
<td>Students may also apply to a stream in physical/biological and forensic anthropology in both the B.A. and B.Sc. programs.</td>
</tr>
<tr>
<td><strong>Similarities and Differences:</strong></td>
</tr>
<tr>
<td>(1) The Laurentian program concentrates on forensic biology only. The proposed UOIT program encompasses broader aspects of forensic science, in particular emphasizing both biology and chemistry.</td>
</tr>
<tr>
<td>(2) The Laurentian program admits 15 students to the first year of the program and also allows second-year entry, with a maximum cohort of 30 students entering second year. The proposed UOIT program admits 48 students each year.</td>
</tr>
</tbody>
</table>
### Institution: Trent University

**Program Name and Credential:**  
*Bachelor of Science in Forensic Science (B.Sc.F.S.)*

**Program Description:** Trent University's Forensic Science degree integrates the study of science, law, and investigative practice and theory, and is designed and taught with the support of the Centre for Law and Justice at Fleming College.

In addition, however, the forensic courses in the degree provide students with an opportunity to integrate science with the techniques and skills specific to the practice of forensics and to consider the issues faced by its practitioners. These skills include casework, teamwork, understanding legal issues related to evidence, and translating complex scientific evidence for a lay audience, whether in reports or the delivery of evidence in court. The partnership with Fleming College and the collaboration with its Centre for Law and Justice ensures the uniqueness and the strength of this aspect of the education of Forensic Degree graduates.

As the Forensic Science students move from the case-based introductory course in first-year to independent study or research in their final year, they will find the curriculum consistently integrates the study of science, law and investigative skills.

Admission offers to the Forensic Science program will be based on an evaluation of academic performance and a Personal Statement of Experience (PSE). Both will be equally weighted in determining offers of admission. Students should have a minimum 75% average to apply. The average will be based on the marks from the 4 pre-requisite courses (ENG4U, SBI4U, SCH4U, and MCB4U or MGA4U) plus an additional 2 OAC/Grade 12 U or M courses.

http://www.trentu.ca/academic/forensicscience/

### Similarities and Differences:

1. The proposed UOIT program has a stronger science core than the Trent program. The UOIT program has 2 courses in each of chemistry, biology, calculus and physics (in the first year), whereas the Trent program contains only biology and chemistry courses. Furthermore, the proposed UOIT program requires high-school calculus, whereas the Trent program does not.

2. The Trent program is collaborative with Fleming College, which delivers primarily the social-science-based and legal courses in the program. All courses in the UOIT program are university-level courses delivered by university faculty; this ensures recognition of the credentials for admission to graduate programs.
Institution: University of Windsor

Program Name and Credential:
Honours Bachelor of Forensic Science
Honours Bachelor of Arts in Forensics and Criminology

Program Description: The Honours Bachelor of Forensic Science program at Windsor is designed to give students an education in both the Arts and Sciences, with a focus on acquiring the skills and knowledge essential to the ethical professional practice of forensics.

In both the classroom and laboratories and through internships, students develop research skills in the preservation, measurement, analysis and identification of criminal evidence. They refine interpersonal and public speaking skills and critical-thinking abilities, and develop capabilities for reporting and establishing a good case. As well, they study law, criminality, judicial systems, and the importance of high ethical standards in criminal investigations.

Admission requirements include: six 12U or 12M courses, including 12U English, 12U Biology, 12U Chemistry, and 12U “Advanced functions and Introduction to Calculus.” About a hundred students will be admitted to first year. At the end of year 2, there will be 40 spaces available for qualified people. If the demand for the program is much greater, the university will consider opening another section to accommodate the demand.

Windsor's Forensic Science program is based in science with a social sciences slant because the work world is looking for scientists with a strong problem solving, critical and ethical foundation—the latter attributes are developed in social science courses that are “critical”. Science is necessary to understand the scientific principles in forensics. But forensics, the management of forensic investigation, the preservation and analysis of evidence, investigation, and the explanation of the science in court require great knowledge about human behaviour. Human behaviour is the research subject of the arts and social sciences.

The Forensic Science program has an experiential component in the final year internship. In that internship, students would be assigned to a place, or find for themselves in their home community an opportunity to undertake forensic research in a police or other lab. At the moment there is no true co-op component (eg. 4 months of study followed by 4 months of work in a co-op placement).

Honours Bachelor of Arts in Forensics and Criminology will give an opportunity to students interested in forensic science to combine it with a critical perspective on the criminal justice, penology, law and social justice, policing, victimology, security, youth justice, and deviance. This may be an excellent alternative for students who want a less science-oriented introduction to forensics studies, but more forensics exposure than in the straight criminology program. The Forensic Science program is a science degree program with a heavy emphasis on science subjects and a required internship. The Forensics and Criminology program has more emphasis on the social sciences and does not have an internship.

http://athena.uwindsor.ca/units/forensicsAndCriminology/main.nsf
### Similarities and Differences (University of Windsor):

1. The proposed UOIT program has a much stronger science core than the Windsor program. The Windsor program has a greater focus on criminology and social-science aspects of forensic science.

2. The Windsor program anticipates a first-year enrolment of 100 students; only 40 will be allowed to continue on to the second year of the program (they indicate that they may open an additional section if the demand warrants). The proposed UOIT program anticipates 48 students will be admitted per year.

### Institution: University of Toronto at Mississauga (Erindale College)

<table>
<thead>
<tr>
<th>Program Name and Credential:</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc. (Hons) in Forensic Science</td>
</tr>
</tbody>
</table>

**Program Description:** Erindale College (University of Toronto) has recently begun a B.Sc. program in Forensic Science. It is a 4 year Honours B.Sc. with a double major required.

Forensic Science is the study of physical evidence in a modern legal context. There are many subfields of Forensic Science including Forensic Anthropology, Forensic Biology, Forensic Chemistry, Forensic Entomology, Forensic Psychology, etc. The program is designed to provide the student with a broad base of knowledge about different aspects of scientific applications; and, at the same time, allow the student to emphasize one particular aspect in greater detail. This goal is accomplished through the requirement of a double major. The major in Forensic Science will provide the general background, and the second major will provide additional depth into one of the sub-fields.

The selection of the second major is limited. While other majors must be approved by the Faculty Advisor, the following are approved:

- **Anthropology** with emphasis on forensic anthropology
- **Biology** with emphasis on forensic biology and molecular biology
- **Chemistry** with emphasis on forensic chemistry
- **Psychology** with emphasis on forensic psychology

[http://www.utm.utoronto.ca/~w3fsc/](http://www.utm.utoronto.ca/~w3fsc/)

**Similarities and Differences:**

The UOIT program is an integrated Forensic Science program emphasizing biology and chemistry, but it also includes some aspects of other areas of Forensic Science. In addition, it also includes first-year core study of physics and calculus. The University of Toronto program provides students with the opportunity to specialize in one forensic sub-field.
Program Comparisons - Post-secondary Institutions Outside Ontario

<table>
<thead>
<tr>
<th>Institution: Mount Royal College</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Name and Credential:</strong></td>
</tr>
<tr>
<td>Forensic Studies Certificate of Achievement</td>
</tr>
<tr>
<td><strong>Program Description:</strong> The Forensic Studies Certificate of Achievement prepares professionals in health, social and law-enforcement disciplines with the forensic knowledge, skills and attitudes necessary to enhance practice. The program is a general introductory program to the field of forensic science that links the health and justice systems such that professionals are more able to collaborate in effective prevention, direction and treatment of victims and perpetrators of trauma, abuse, violence and neglect.</td>
</tr>
<tr>
<td>The Forensic Studies Certificate of Achievement offers unique &quot;state-of-the-art&quot; credit-based training for professionals working in health care, law-enforcement, corrections, social work, family and child care who are seeking to expand their competence and upgrade their credentials. The program is designed for maximum flexibility to meet the needs of professionals seeking to study while they continue to work where they reside.</td>
</tr>
<tr>
<td>Admission Requirements: A completed diploma or degree from a recognized post-secondary institution in health, allied health, social science, criminology or justice studies, or be an undergraduate student in the senior-year of study.</td>
</tr>
<tr>
<td>Upon successful completion of 18 credits (approximately 6 courses), a full Certificate in Forensic Studies will be awarded.</td>
</tr>
<tr>
<td><a href="http://www.mtroyal.ab.ca/Calendar/certificates/FSCApd.htm">http://www.mtroyal.ab.ca/Calendar/certificates/FSCApd.htm</a></td>
</tr>
<tr>
<td><strong>Similarities and Differences:</strong></td>
</tr>
<tr>
<td>This program is a post-degree program, requiring a degree in the areas of “nursing, medicine, allied health, social science, criminology, or justice studies”. It is not a science-based program, but is oriented towards social-science aspects of forensics.</td>
</tr>
<tr>
<td>Institution: British Columbia Institute of Technology</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td><strong>Program Name and Credential:</strong></td>
</tr>
<tr>
<td><em>Bachelor of Technology in Forensic Investigation</em></td>
</tr>
</tbody>
</table>

**Program Description:** The Bachelor of Technology in Forensic Investigation has developed from an extremely successful Advanced Specialty Certificate program that was initiated at BCIT in 1997. The objective of this degree is to enhance the theoretical knowledge base and investigative capabilities of the people wishing to work in the specialized and diverse fields of forensic investigation. Students gain a clear understanding of the scientific principles, procedures, technologies and the legal ramifications of an investigator’s work.

The forensics curriculum is designed to achieve a balance between intellectual rigor and current applications of technologies. The Bachelor of Technology in Forensic Investigation has three options for the student: *Forensic Science*, *Economic Crime*, and *Computer Crime*. Each track combines core courses in liberal studies, management, legal and investigative courses along with the specialized courses of each option. These options along with a variety of electives, selected topics courses and a directed-studies graduation project allow the students the flexibility to meet their educational goals and personal interests.

The Bachelor of Technology in Forensic Investigation offers the equivalent of two years (60 credits) of upper level coursework and, like others of its kind at BCIT, it is a degree completion program that builds upon a two-year BCIT diploma or its equivalent.


**Similarities and Differences:**

The BCIT program provides its Bachelor of Technology program in Forensic Investigation (Forensic Science option) via part-time studies. It combines 3 core courses (2 courses in “Criminal Law”, and one in “Science, Technology and the Law”) with 18 credits in courses from a range of areas (“investigate framework”, biological aspects”, “chemical aspects”, “physical science aspects”, and courses from a list of approved electives). Program entry requires a minimum of 2 years of university or other studies and 6 months work experience in a relevant discipline; it requires 2 years work experience by completion of the program.

It is difficult to compare this program with the proposed UOIT program. However, all graduates of the BCIT program would not be guaranteed to have the same science skills as those of UOIT graduates.
The following program is based in the UK. UOIT has had extensive discussions with faculty involved with this program.

**Institution:** University of Central Lancashire (UCL), Preston, UK

**Program Name and Credential:**
BSc(Hons) Forensic Science

**Program Description:** The BSc (Hons) Forensic Science degree comprises four streams of study which are delivered over a three-year full time period of study. The course can also be taken part time during the day over a proportionately longer period.

At the core of the course is Forensic Practice and Investigation. This compulsory stream provides education and training in the management and processing of crime scenes, the collection and analysis of evidence from crime scenes, and law for forensic scientists. It is delivered through lectures, tutorials, seminars, practical sessions, crime scene simulations and courtroom experience. Students are introduced to simulations of crime scenes for forensic photography, processing and collection of forensic evidence, and analyse a range of different types of evidence, such as fingerprinting, footwear impressions, hairs and fibres, glass fragments, and toolmarks in the laboratory. As well as covering the law relating to forensic science, students also present evidence in a moot courtroom under cross-examination. The course also has three optional streams which complement the core modules in forensic practice and investigation: Forensic Biology, Forensic Chemistry and Forensic Anthropology. Students may elect to study all three options, or to specialize in only two of these in the second and third years of the course.

Forensic Biology examines the application of general and molecular biology to forensic investigations. For example, our individuality is manifested at the molecular level in terms of our DNA, proteins and antigens, and techniques in molecular genetics, biochemistry and immunology can be used to detect this individuality in biological samples, such as blood, semen, hairs, teeth, bones or saliva. In addition to molecular techniques such as DNA profiling, biology can also provide forensic information in other ways, such as the analysis of insect activity on corpses, and botanical or pollen analysis of samples. The subject also explores the information that can be obtained from pathological and medical examinations.

Forensic Chemistry uses chemical techniques to examine material evidence. Toxicology uses techniques to identify drugs and poisons, both in biological samples and in their purer forms. Forensic chemistry also examines evidence from fires and cases of arson, and of explosives and ballistics. The Department also has a strong interest in attempts to destroy forensic evidence by means of fire, and is able to examine and research evidence that has been through house fires, in conjunction with the University’s Centre for Fire and Explosion Studies. This course also uses chemical and physical techniques to match and identify paint, inks and other trace material evidence.

Forensic Anthropology is concerned with the recovery and analysis of human remains, within both forensic and archaeological contexts. As well as identifying and excavating ancient and clandestine graves and burials, the course focuses on the collection of the human remains and associated evidence from a variety of scenes to further forensic and archaeological investigations. As part of their studies, students will gain practical experience in the disposal and recovery of artificial human remains in land and water burials at a dedicated University facility, and in the identification of human skeletal remains within the laboratory.

http://www.uclan.ac.uk/facs/science/forensic/courses/bscforensicscience.htm
Similarities and Differences (Un. of Central Lancashire (UCL), Preston, UK):

It is difficult to compare programs in different countries, but the proposed UOIT program is similar in spirit to the UCL program. The proposed UOIT program and the UCL program cover the same basic areas of forensic studies. However, the proposed UOIT program emphasizes chemistry and biology, whereas the UCL program also allows a concentration in anthropology. Detailed examination of the UCL courses indicates that the proposed UOIT program has a stronger science core than the UCL program (for example, the only mathematics course in the UCL program involves statistics, and the program contains no compulsory physics course).
### 6.4 Program Level Learning Outcomes

<table>
<thead>
<tr>
<th>Program Level Learning Outcomes</th>
<th>Program requirement(s), or segments of requirements, that contribute to this outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. acquire specialized knowledge and understanding of the concepts, theories and principles of the biological and chemical sciences, and their relation to the practice of forensic science</td>
<td>Most courses in the first 2 years of the program are designed to present the basic concepts, theories and principles related to chemistry and biology. The courses in the final 2 years of the program apply these scientific concepts to the field of forensic science.</td>
</tr>
<tr>
<td>2. utilize knowledge to analyze, evaluate, and apply the scientific concepts, techniques and processes involved in the conduct of forensic science</td>
<td>Forensic Biology, Forensic Chemistry, Forensic Medicine, Forensic Practice, Advanced Topics in Forensic Science, Drug Chemistry and Toxicology, Research Project in Forensic Science</td>
</tr>
<tr>
<td>3. appreciate and evaluate the importance of new and emerging technologies in forensic science</td>
<td>Forensic Biology, Forensic Chemistry, Forensic Medicine, Forensic Practice, Advanced Topics in Forensic Science, Research Project in Forensic Science</td>
</tr>
<tr>
<td>4. examine the social, cultural, ethical, environmental, safety and economic consequences of developments in forensic science, in local, national and global contexts</td>
<td>Introductory Forensic Science Advanced Topics in Forensic Science, Research Project in Forensic Science</td>
</tr>
<tr>
<td>5. understand and utilize contemporary laboratory and measurement techniques, procedures, safety protocols and equipment relevant to sciences and the forensic sciences</td>
<td>All courses with laboratory components will contribute to the achievement of this program outcome. Some examples are: the core year one courses, Introductory Physiology, Cell Biology, Introduction to Organic Chemistry, Crime Scene Science, Forensic Chemistry, Forensic Medicine, Forensic Practice, Drug Chemistry and Toxicology</td>
</tr>
<tr>
<td>6. plan and implement experiments and investigations, critically examine the results and draw valid conclusions</td>
<td>Courses with laboratory components will contribute to the achievement of this program outcome. Examples include: Research Project in Forensic Science, Forensic Chemistry, Forensic Biology, Forensic Medicine, Forensic Practice</td>
</tr>
<tr>
<td>Program Level Learning Outcomes</td>
<td>Program requirement(s), or segments of requirements, that contribute to this outcome</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>7. evaluate the level of uncertainty in experimental results and theoretical predictions and compare these results with expected outcomes, published data or current hypotheses</td>
<td>Statistics and Probability for Biological Science, Forensic Biology, Drug Chemistry and Toxicology, Advanced Topics in Forensic Science, Research Project in Forensic Science</td>
</tr>
</tbody>
</table>
| 8. communicate effectively in written, spoken and visual format with both technical experts and with members of the general public | Cell Biology, Research Project in Forensic Science, Forensic Practice, Law for Forensic Scientists, Criminalistics, Introductory Psychology, Crime Scene Science  
**Applicable to all required courses, science elective courses and also to non-science elective courses** |
| 9. use current Information Technology techniques and tools to access, store and retrieve information, to acquire and process data, and to analyze and solve problems | Scientific Computing Tools, Independent Research Project in Forensic Science.  
**Every student in the program will have a laptop computer and access to the University Intranet and the Internet. The use of technology will be integrated into all courses, in varying degrees, as part of research, class and assignment preparation, presentations.** |
<p>| 10. contribute to multidisciplinary and multi-cultural teams, in both membership and leadership roles | Applicable to all courses (required science and forensic science courses, science electives, non-science electives) in which students are engaged in group activities and assignments |
| 11. recognize and value the alternative outlooks that people from various social, ethnic and religious backgrounds may bring to scientific endeavours | Collaborative Leadership, Law for Forensic Scientists |</p>
<table>
<thead>
<tr>
<th>Program Level Learning Outcomes</th>
<th>Program requirement(s), or segments of requirements, that contribute to this outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. understand the importance of quality management and quality performance in forensic science applications</td>
<td>Introductory Forensic Science&lt;br&gt;Crime Scene Science&lt;br&gt;Forensic Practice</td>
</tr>
<tr>
<td>13. use well-developed strategies to update knowledge, and to maintain and enhance learning throughout life</td>
<td>Applicable to all courses in which students are required to utilize various resources and conduct research to prepare for discussions, reports, assignments or presentations&lt;br&gt;Examples include:&lt;br&gt;Collaborative Leadership&lt;br&gt;Research Project in Forensic Science,&lt;br&gt;<strong>Every student will have a laptop computer and the access to University Intranet and the Internet. All alumni will retain lifelong access to information on the Intranet for their future career needs.</strong></td>
</tr>
<tr>
<td>14. understand and comply with ethical and legal standards in forensic science practice</td>
<td>Introductory Forensic Science&lt;br&gt;Criminalistics&lt;br&gt;Forensic Practice&lt;br&gt;Forensic Psychology&lt;br&gt;Law for Forensic Scientists&lt;br&gt;Research Project in Forensic Science</td>
</tr>
<tr>
<td>15. demonstrate a specialist knowledge within a number of the sub-disciplines of forensic science</td>
<td>Forensic Medicine&lt;br&gt;Forensic Chemistry&lt;br&gt;Forensic Biology&lt;br&gt;Forensic Psychology&lt;br&gt;Research Project in Forensic Science&lt;br&gt;Advanced Topics in Forensic Science</td>
</tr>
</tbody>
</table>
6.5 Academic Course Schedule Information

6.5.1 Program Hour/Credit Conversion Justification

1. Does the program include a laboratory component? Yes

2. If "yes" will the calculation of program breadth be based on a conversion of program hours into program credits? No

3. If "yes", complete Table 6.5.1. If "no" proceed to Appendix 6.5.2

6.5.2 Academic Course Schedule - Baccalaureate Part-Time Studies

Baccalaureate part-time studies are not yet being offered by the University of Ontario Institute of Technology and are not planned as part of this proposal. This section, therefore, is not applicable to this submission.

6.5.3 A and 6.5.3 B Academic Course Schedule - Graduate Full-Time and Part-Time Studies

Graduate courses are not yet being offered by the University of Ontario Institute of Technology. These sections are not applicable to this submission.
### 6.5.2A Academic Course Schedule: BSc (Hons) in Forensic Science - (Baccalaureate Full-Time Studies)

<table>
<thead>
<tr>
<th>Year and Semester</th>
<th>Course Title</th>
<th>Total DW Course Semester Hours</th>
<th>Total DO Course Semester Hours</th>
<th>Total DL Course Semester Hours</th>
<th>Course Pre-requisites and Co-requisites</th>
<th>Proposed Instructor (or indicate if faculty to be recruited)</th>
<th>Highest Qualification earned (or required of faculty to be hired) and, only where applicable, highest qualifications in progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1</td>
<td>Chemistry I</td>
<td>71.5</td>
<td>None</td>
<td></td>
<td>Barsby, Naumkin, Paal, Bartholomew</td>
<td>PhD</td>
<td></td>
</tr>
<tr>
<td>1,1</td>
<td>Biology I</td>
<td>71.5</td>
<td>None</td>
<td></td>
<td>Bonetta, Forrester, Holdway, Bardin, Green-Johnson,</td>
<td>PhD</td>
<td></td>
</tr>
<tr>
<td>1,1</td>
<td>Physics for Biosciences I</td>
<td>71.5</td>
<td>None</td>
<td></td>
<td>Berg, Perz, Lit, Kapoustine</td>
<td>PhD</td>
<td></td>
</tr>
<tr>
<td>1,1</td>
<td>Calculus I</td>
<td>65</td>
<td>None</td>
<td></td>
<td>Aruliah, Buono, Lewis, Kletskin</td>
<td>PhD</td>
<td></td>
</tr>
<tr>
<td>1,1</td>
<td>Scientific Computing Tools</td>
<td>65</td>
<td>None</td>
<td></td>
<td>Smith, Lewis</td>
<td>PhD</td>
<td></td>
</tr>
<tr>
<td>1,2</td>
<td>Chemistry II</td>
<td>71.5</td>
<td>Chemistry I</td>
<td>Barsby, Naumkin, Paal, Bartholomew</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2</td>
<td>Biology II</td>
<td>71.5</td>
<td>Biology I</td>
<td>Bonetta, Forrester, Holdway, Bardin, Green-Johnson</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2</td>
<td>Physics for Biosciences II</td>
<td>71.5</td>
<td>Physics for Biosciences I</td>
<td>Berg, Perz, Lit, Kapoustine</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2</td>
<td>Calculus II</td>
<td>65</td>
<td>Calculus I</td>
<td>Aruliah, Buono, Lewis, Kletskin</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2</td>
<td>Introductory Forensic Science</td>
<td>52</td>
<td>None</td>
<td>Nugent and faculty to be hired</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,1</td>
<td>Introductory Physiology</td>
<td>71.5</td>
<td>Biology II</td>
<td>Bonetta, Forrester, Bardin, Green-Johnson, Holdway</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,1</td>
<td>Cell Biology</td>
<td>71.5</td>
<td>Biology II</td>
<td>Bonetta, Forrester, Bardin, Green-Johnson, Holdway</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,1</td>
<td>Introduction to Organic Chemistry</td>
<td>71.5</td>
<td>Chemistry II</td>
<td>Paal</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,1</td>
<td>Statistics and Probability for Biological Science</td>
<td>52</td>
<td>Calculus II</td>
<td>Lewis, Smith</td>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,1</td>
<td>Crime Scene Science</td>
<td>78</td>
<td>Introductory Forensic Science</td>
<td>clear standing in Program</td>
<td>Faculty to be hired</td>
<td>PhD</td>
<td></td>
</tr>
</tbody>
</table>
### 6.5.2A Academic Course Schedule: BSc (Hons) in Forensic Science - (Baccalaureate Full-Time Studies)

<table>
<thead>
<tr>
<th>Year and Semester</th>
<th>Course Title</th>
<th>Total DW Course Semester Hours</th>
<th>Total DO Course Semester Hours</th>
<th>Total DL Course Semester Hours</th>
<th>Course Pre-requisites and Co-requisites</th>
<th>Proposed Instructor (or indicate if faculty to be recruited)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2,2</td>
<td>Biochemistry</td>
<td>52</td>
<td></td>
<td></td>
<td>Biology II, Chemistry II</td>
<td>Green-Johnson, Paal</td>
<td>PhD</td>
</tr>
<tr>
<td>2,2</td>
<td>Genetics and Molecular Biology</td>
<td>71.5</td>
<td></td>
<td></td>
<td>Biology II</td>
<td>Forrester, Green-Johnson</td>
<td>PhD</td>
</tr>
<tr>
<td>2,2</td>
<td>Human Anatomy</td>
<td>71.5</td>
<td></td>
<td></td>
<td>None</td>
<td>Green-Johnson</td>
<td>PhD</td>
</tr>
<tr>
<td>2,2</td>
<td>Introductory Psychology</td>
<td>39</td>
<td></td>
<td></td>
<td>None</td>
<td>Scott, Clow</td>
<td>PhD</td>
</tr>
<tr>
<td>2,2</td>
<td>Organic Chemistry</td>
<td>52</td>
<td></td>
<td></td>
<td>Introduction to Organic Chemistry</td>
<td>Paal</td>
<td>PhD</td>
</tr>
<tr>
<td>3,1</td>
<td>Principles of Pharmacology and Toxicology</td>
<td>71.5</td>
<td></td>
<td></td>
<td>Introductory Physiology, Biochemistry</td>
<td>Green-Johnson</td>
<td>PhD</td>
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<tr>
<td>3,1</td>
<td>Analytical Chemistry</td>
<td>71.5</td>
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<td></td>
<td>Chemistry II</td>
<td>Barsby</td>
<td>PhD</td>
</tr>
<tr>
<td>3,1</td>
<td>Physical Chemistry for BioSciences</td>
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<td></td>
<td></td>
<td>Chemistry II, Calculus II</td>
<td>Naumkin</td>
<td>PhD</td>
</tr>
<tr>
<td>3,1</td>
<td>Criminalistics</td>
<td>71.5</td>
<td></td>
<td></td>
<td>Crime Scene Science</td>
<td>Faculty to be hired</td>
<td>PhD</td>
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<tr>
<td>3,1</td>
<td>Elective (Sci)</td>
<td>65</td>
<td></td>
<td></td>
<td>As required for selected elective</td>
<td></td>
<td>PhD</td>
</tr>
<tr>
<td>3,2</td>
<td>Forensic Biology</td>
<td>71.5</td>
<td></td>
<td></td>
<td>Biochemistry, Genetics &amp; Molecular Biology, Criminalistics</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>3,2</td>
<td>Forensic Practice</td>
<td>52</td>
<td></td>
<td></td>
<td>Successful completion of Year 3, Semester 1 in Program</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>3,2</td>
<td>Forensic Chemistry</td>
<td>71.5</td>
<td></td>
<td></td>
<td>Analytical Chemistry, Criminalistics</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>3,2</td>
<td>Elective (Sci)</td>
<td>65</td>
<td></td>
<td></td>
<td>As required for selected elective</td>
<td></td>
<td>PhD</td>
</tr>
</tbody>
</table>
### 6.5.2A Academic Course Schedule: BSc (Hons) in Forensic Science - (Baccalaureate Full-Time Studies)

<table>
<thead>
<tr>
<th>Year and Semester</th>
<th>Course Title</th>
<th>Total DW Course Semester Hours</th>
<th>Total DO Course Semester Hours</th>
<th>Total DL Course Semester Hours</th>
<th>Course Pre-requisites and Co-requisites</th>
<th>Proposed Instructor (or indicate if faculty to be recruited)</th>
<th>Highest Qualification earned (or required of faculty to be hired) and, only where applicable, highest qualifications in progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,2</td>
<td>Elective (LS)</td>
<td>52</td>
<td></td>
<td></td>
<td>As required for selected elective</td>
<td></td>
<td>PhD</td>
</tr>
<tr>
<td>4,1</td>
<td>Forensic Psychology</td>
<td></td>
<td>52</td>
<td></td>
<td>Good standing in Year 4 of Program</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>4,1</td>
<td>Forensic Medicine</td>
<td>71.5</td>
<td></td>
<td></td>
<td>Forensic Biology I</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>4,1</td>
<td>Drug Chemistry &amp; Toxicology</td>
<td>71.5</td>
<td></td>
<td></td>
<td>Forensic Biology, Forensic Chemistry, Principles of Pharmacology and Toxicology</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>4,1</td>
<td>Elective (LS)</td>
<td>52</td>
<td></td>
<td></td>
<td>As required for selected elective</td>
<td></td>
<td>PhD</td>
</tr>
<tr>
<td>4,1</td>
<td>Elective (LS)</td>
<td>52</td>
<td></td>
<td></td>
<td>As required for selected elective</td>
<td></td>
<td>PhD</td>
</tr>
<tr>
<td>4,2</td>
<td>Research Project in Forensic Science</td>
<td></td>
<td>39</td>
<td></td>
<td>Enrolment in final semester of Forensic Science Program</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>4,2</td>
<td>Law for Forensics Scientists</td>
<td></td>
<td>52</td>
<td></td>
<td>Good standing in Year 4 of Program</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>4,2</td>
<td>Advanced Topics in Forensic Science</td>
<td></td>
<td>39</td>
<td></td>
<td>Forensic Practice</td>
<td>Faculty to be hired</td>
<td>PhD</td>
</tr>
<tr>
<td>4,2</td>
<td>Elective (Sci)</td>
<td></td>
<td>65</td>
<td></td>
<td>As required for selected elective</td>
<td></td>
<td>PhD</td>
</tr>
<tr>
<td>4,2</td>
<td>Elective (Sci)</td>
<td></td>
<td>65</td>
<td></td>
<td>As required for selected elective</td>
<td></td>
<td>PhD</td>
</tr>
</tbody>
</table>
### 6.5.2A Academic Course Schedule Summary: BSc (Hons) in Forensic Science - (Baccalaureate Full-Time Studies)

<table>
<thead>
<tr>
<th>Subtotal Course Hours</th>
<th>A = Sum of DW Hours</th>
<th>B = Sum of DO Hours</th>
<th>C = Sum of DL Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1833</td>
<td>507</td>
<td>156</td>
</tr>
<tr>
<td><strong>Total Program Hours</strong></td>
<td><strong>2496</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Calculate the percentage of the Program offered in DO and DL courses: 26.5%  
  Must be at least 20% of total program

- Calculate the percentage of the breadth courses offered in DO courses: 76.5%  
  Must be at least 75% of total DO and DL courses

- Calculate the percentage of the breadth courses offered in DL courses: 23.5%  
  Must not be greater than 25% of the total DO and DL courses
6.6.1 Course Outlines and Other Graduation Requirements

Course Descriptions for the BSc in Forensic Science (Honours)

New courses are identified by shading. The other courses described below were reviewed and approved in the original assessment of UOIT’s BSc in Biological Science program, its BSc in Chemistry program, or other UOIT programs.

YEAR 1, SEMESTER 1

PHY 1030U Physics for Biosciences I. This course introduces basic concepts of physics relevant to the biological sciences, in the areas of mechanics; vibrations and waves; properties of solids, liquids and gases; and heat. Lect: 3hrs, Lab: 3hrs bi-weekly, Other: 2hrs bi-weekly. Prerequisites: Advanced Functions and Introductory Calculus 4U or OAC Calculus (required); Physics 4U or OAC Physics (recommended). Notes: Students without the Physics prerequisite require the permission of the instructor in charge of the course, and will be responsible for making up background material. Exclusions: PHY 1010U, PHY 1880U.

MATH 1010U Calculus I. Study of limits and continuity, the derivative, Rolle’s theorem, the Mean-Value Theorem for Derivatives, Fermat’s Theorem, the differential and anti-differentiation, the definite integral, area, the Mean-Value Theorem for Integrals, the Fundamental Theorem of Calculus, and other topics as time permits. Applications to science and engineering will be incorporated. Lect: 3hrs, Other: 2hrs. Prerequisites: OAC Calculus or 12U Advanced Functions and Introductory Calculus.

CHEM 1010U Chemistry I. The concepts of chemistry including simple reactions and stoichiometry; atomic and molecular structure and chemical bonding; chemical equilibria involving gases; acids, bases, salts, buffers and ionic equilibria; titration; introduction to organic chemistry and the reactions of organic compounds; polymer chemistry. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisites: OAC or 12U Chemistry (recommended). Note: Students without the Chemistry prerequisite require the permission of the instructor in charge of the course, and will be responsible for making up background material. Credit may be obtained for only one of CHEM 1010U and CHEM 1800U.

BIOL 1010U Biology I. This course examines the evolutionary basis of life and the structure and function of living organisms. The major tissues, organs, and organ systems and their development from simple structures to more complicated systems will be examined. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisites: OAC or 12U Biology (recommended). Credit Restrictions: BIOL 1840U. Note: Students without the Biology pre-requisite may be admitted by permission of the course instructor, and will be responsible for making up background material.

CSCI 1000U Scientific Computing Tools. A course covering the use of various software tools for use in the UOIT web-centric and laptop environment in Science. Modules will be included on: web tools, spreadsheets, file management, meta-computing tools (Maple, Matlab), basic graphics tools, scientific text processing, presentation tools (Powerpoint, Visio). Lect: 3hrs, Other: 2hrs.
YEAR 1, SEMESTER 2

PHY 1040U Physics for Biosciences II. This course introduces basic concepts of physics relevant to the biological sciences, in the areas of electricity and magnetism; optics; sound and acoustics; nuclear physics and nuclear medicine. Lect: 3hrs, Lab: 3hrs bi-weekly, Other: 2hrs bi-weekly. Prerequisites: PHY 1010U or 1030U. Exclusions: PHY 1020U, PHY 1880U.

MATH 1020U Calculus II. A continuation of Calculus I that addresses techniques of integration, applications of integration to volumes, arc length and surface area, parametric equations, polar coordinates, functions of two or more variables, partial derivatives, differentials, Taylor and MacLauren series, double and triple integrals, and other topics as time permits. Applications to science and engineering will be incorporated. Lect: 3hrs, Other: 2hrs. Prerequisites: MATH 1010U

CHEM 1020U Chemistry II. Introduction to the fundamental principles governing chemical transformations. Thermochemistry and thermodynamics (energy, heat, enthalpy, entropy and free energy); the rates of reaction, the law of radioactive decay and reaction mechanisms; redox reactions and electrochemistry. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisites: CHEM 1010U. Credit may be obtained for only one of CHEM 1020U and CHEM 1800U.

BIOL 1020U Biology II. Biology explores some of the basic challenges that organisms face in order to develop, survive and reproduce. The second half of the course will address the fundamental principles of ecology and give a basic understanding of individual populations and communities. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisites: BIOL 1010U.

FSCI 1010U Introductory Forensic Science. This course introduces Forensic Science to students with no prior knowledge of the subject. Having completed the course, the student will be aware of the multidisciplinary nature of forensic science, how a case is studied, the use of scientific techniques in case investigations and the presentation of evidence in court. The student will be encouraged to develop a critical approach to assessing evidence. Lect: 3hrs. Tutorial: 2hrs Bi-Weekly

YEAR 2, SEMESTER 1

BIOL 2010U Introductory Physiology. Overview of the major physiological processes involved in plant and animal growth and development including the mechanism of action of growth regulators and hormones. Emphasis is placed on the use of genetic, biochemical, and physiological approaches to understand the regulation of different systems in plants and animals. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisites: BIOL 1020U.

BIOL 2030U Cell Biology. Provides a basic knowledge of the structural and functional properties of cells. Emphasizes the mechanisms by which signalling molecules and the process of signal transduction integrate and coordinate the functions of many individual cells in a multi-cellular organism. Explores factors regulating the cell cycle and growth. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisites: BIOL 1020U. Credit Restrictions: BIOL 2840U.
**CHEM 2020U Introduction to Organic Chemistry.** An introduction to the principles and techniques of organic chemistry, including a study of the correlation of reactions and physical properties of organic compounds with structure and energetic concepts; structure, bonding, properties, reactions and synthesis of mono-functional aliphatic and aromatic compounds; stereochemistry and reaction mechanism theory; study of infrared, nuclear magnetic resonance and mass spectroscopy. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs, Bi-Weekly. Prerequisites: CHEM 1020U.

**STAT 2020U Statistics and Probability for Biological Science.** This course introduces the concepts and techniques of statistics and probability to collect, present, analyze and interpret data, and make decisions in the presence of variability. Students study a selection of topics relevant to biological science, selected from: basic concepts of probability theory: events, sample spaces, probability; basic concepts of discrete mathematics: set theory, propositional logic, combinatorics; probability: marginal probability, conditional probability, independence, discrete and continuous random variables; probability distributions: binomial, Poisson, uniform, normal, etc.; mean and variance; the central limit theorem; statistical inference: estimation, significance tests, confidence intervals; introduction to experimental design; applications to quality control. Lect: 3hrs, Other: 1hr. Prerequisites: MATH 1020U. Credit Restrictions: STAT 2800U, STAT 2010U, STAT 3800U, BUSI 1450U, JSTS 2820U.

**FSCI 2010U Crime Scene Science.** This course introduces students to all the processes that occur at a crime scene. Students will be taught crime scene procedures, from the photography of the scene and record keeping at the scene through to the preservation and collection of evidence from crime scenes. This will include techniques for the recovery of fingerprints, footwear marks, and tool marks and the collection and correct packaging of items such as hairs, fibers, glass and paint. Students will also be introduced to the legal and documentary framework that accompanies the collection and preservation of evidence. In addition to theoretical knowledge, students will experience the practicalities of searching for and recovering evidence from crime scenes. The evidence will be examined and considered in terms of the amount of information that can be obtained from the analysis. The module will stress the multidisciplinary nature of forensic investigations and integrate legal, practical and scientific aspects of crime scene investigations. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 3hrs Bi-Weekly. Pre-requisites: FSCI 1010U Introductory Forensic Science, and clear standing in the Forensic Science program.

**YEAR 2, SEMESTER 2**

**BIOL 2040U Biochemistry.** Focuses on enzyme mechanisms and stereochemistry, carbohydrate metabolism, glycolysis, glycogen breakdown and synthesis, transport across membranes, the citric acid cycle, electron transport and oxidative phosphorylation, the pentose phosphate pathway and the glycoxylate pathway, lipid metabolism, synthesis and role of ketone bodies, amino acid metabolism, and an overview of the urea cycle. Lect: 3hrs, Other: 2hrs Bi-Weekly. Prerequisites: BIOL 1020U, CHEM 2020U. Credit Restrictions: BIOL 1021U, CHEM 2021U.
**BIOL 2020U Genetics and Molecular Biology.** An introduction to the fields of genetics and molecular biology. Topics include the science of inheritance, DNA structure and replication, meiosis, regulation of gene expression, sex-linked inheritance, analyzing inheritance and heredity, human genetic disorders, and the molecular biology technology on which DNA cloning, and construction of recombinant DNA and of transgenic organisms is based on. Lect: 3hrs, Lab: 3hrs, Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisites: BIOL 1020U. Credit Restrictions: BIOL 2840U.

**BIOL 2050U Human Anatomy.** This course is an introduction to the study of body structure with a strong emphasis on human anatomy. Emphasis will be put on the description of bones and joint, muscles, nerves, and blood vessels and lymphatics. The structure of various organs found in the thoracic, abdominal and pelvic cavities will also be described. Lect: 3hrs, Lab: 3hrs, Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisite: BIOL2010U Introductory Physiology

**PSYC 1000U Introductory Psychology.** This course introduces students to the vocabulary and principles of psychology. It also surveys the major theories and research related to the scientific study of human behaviour. Students will be encouraged to develop an understanding of the principles that underlie human behaviour. In addition, students will gain some insight into how and why people think, learn and behave. An attempt will be made to illustrate theory with practical examples, which are meaningful to students. The course examines the scientific process of research, physiology and perception, learning, memory and motivation, consciousness, stress, health, adjustment, and social psychology. Lect. 3 hrs.

**CHEM 3020U Organic Chemistry.** Mechanistic analysis of chemical reactivity of common functional groups with a focus on nucleophilic substitutions at carbonyl centers, functional group transformations in organic synthesis; aromatic chemistry, alkanes, alkyl halides, alkynes, alkenes, and alcohols; carbohydrates, amino acids, proteins, heterocycles; applications of spectroscopic techniques. Lect: 3 hrs, Lab: 3hrs Bi-Weekly. Pre-requisites: CHEM 2020U.

**YEAR 3, SEMESTER 1**

**CHEM 2030U Analytical Chemistry.** A study of the principles of analytical chemistry through demonstrations of applications in chemistry, biology, medicine and the study of the environment. Includes: standard analytical chemistry techniques based on chemical equilibrium, volumetric analysis, analytical electrochemistry; use of buffers for pH-control; statistical treatment of analytical data. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisites: CHEM 1020U.

**BIOL 3020U Principles of Pharmacology and Toxicology.** This course provides an overview of the action and toxicity of drugs that affect the autonomic nervous system, the central nervous system, and cardiovascular function in both normal and pathological conditions. Toxicological effects of food, food additives, household and industrial products and wastes will also be examined. 3 cr, 3 lec, 1 oth. Prerequisite: BIOL 2010U Corequisite: BIOL 2040U. Credit restriction: BIOL 2810U.
### CHEM 3040U Physical Chemistry for BioSciences
This course provides a study of the principles of physical chemistry, with an orientation to the biological sciences. Topics include: classical thermodynamics, solution thermodynamics, chemical equilibrium, electrochemistry, acids and bases, phase equilibria, chemical kinetics, pharmacokinetics, enzyme kinetics, spectroscopy, photobiology, macromolecules. Lect: 3hrs, Other: 1hr Pre-requisites: Chemistry II and Calculus II.

### FSCI 3010U Criminalistics
Building on the material introduced in Crime Scene Science, this course provides experience of major crime scene investigation, such as aggravated burglaries and sexual or violent offences. Importantly it also provides the principles of the laboratory based searching and recovery of evidence and the techniques and principles involved in the analysis of forensic evidence, such as hair, glass, toolmarks, footwear and tire marks, handwriting and document analysis, firearms examination and ballistics, fingerprints. Lect: 3hrs, Lab: 3 hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisite: Successful completion of year 3, semester 1 in Forensic Science program.

### Elective
Students may select science or liberal studies electives from a variety of courses offered by other schools in UOIT or through Trent University at Durham. Pre-requisite(s): As required for selected subject.

### YEAR 3, SEMESTER 2

#### FSCI 3020U Forensic Biology
The application of biological principles to forensic science. Topics include: properties of body fluids, blood grouping, immunological tests, identification of biomolecules, introductory DNA profiling, entomology, botany, and palynology. Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisite: Successful completion of year 3, semester 1 in Forensic Science program.

#### FSCI 3030U Forensic Practice
This course gives students the opportunity to gain practical experience of many of the techniques learned in Criminalistics. It also provides the opportunity to apply these to simulated cases involving the recovery, analysis potential evidence and interpretation of the results. The objective is to identify all the relevant forensic data to support the case, carry out the relevant analysis and produce a report suitable for court use detailing the findings. Lect: 1 hr, Lab/tutorial: 3 hrs weekly. Prerequisite: Criminalistics.

#### FSCI 3040U Forensic Chemistry
The application of chemical principles to forensic science. The course includes selected topics from CHEM 3830U (Instrumental Analytical Chemistry), such as chromatographic and spectroscopic techniques and their applications to forensic science, including: fire and explosion investigation and analysis of paint, fibers and other evidential materials. Lect: 3 hrs, Lab: 3hrs Bi-Weekly, Other: 2hrs Bi-Weekly. Prerequisite: Successful completion of year 3, semester 1 in Forensic Science program.
Elective
Students may select science or liberal studies electives from a variety of courses offered by other schools in UOIT or through Trent University at Durham. Pre-requisite(s): As required for selected subject.

Elective
Students may select science or liberal studies electives from a variety of courses offered by other schools in UOIT or through Trent University at Durham. Pre-requisite(s): As required for selected subject

YEAR 4, SEMESTER 1

FSCI 4010U Forensic Psychology
An overview of the principles of forensic psychology, including: theories of the criminal, offender profiling, risk assessments, lie detection, and psychology of evidence and criminal proceedings. Lect: 3 hrs, Other: 2 hrs Bi-Weekly. Prerequisite: Good standing in year 4 of the Forensic Science program.

FSCI 4020U Forensic Medicine
A continuation of the topics of Forensic Biology I, including: molecular markers of individuality (DNA profiling and genetic analysis), immunology, forensic pathology, forensic toxicology (analysis and detection of drugs, toxins and their metabolites), forensic taphonomy (death and decomposition processes). Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2 hrs Bi-Weekly. Prerequisite: Forensic Biology

FSCI 4030U Drug Chemistry and Toxicology
This course builds on Forensic Chemistry, Forensic Biology, and Pharmacology and Toxicology, and examines the use of drug chemistry and toxicology. The course reviews the roles of the forensic chemist and toxicologist with respect to the forensic analysis of drug samples and drug metabolites in biological matrices. Throughout the course, students will be exposed to a detailed case study for which they will have to identify the proper methods for forensic analysis, examine the result of the analysis and draw conclusions regarding the cases). Lect: 3hrs, Lab: 3hrs Bi-Weekly, Other: 2 hrs Bi-Weekly. Prerequisite: Forensic Chemistry, Forensic Biology, Pharmacology and Toxicology

Elective
Students may select science or liberal studies electives from a variety of courses offered by other schools in UOIT or through Trent University at Durham. Pre-requisite(s): As required for selected subject

Elective
Students may select science or liberal studies electives from a variety of courses offered by other schools in UOIT or through Trent University at Durham. Pre-requisite(s): As required for selected subject
YEAR 4, SEMESTER 2

FSCI 4400 Research Project in Forensic Science
This course provides students with the opportunity to integrate and synthesize knowledge gained throughout their program of study. In consultation with a faculty advisor, students will select a research topic and design, implement and report on a project in an area of interest. Lab/tutorial: 3hrs Weekly. Prerequisite: Good standing in year 4 of the Forensic Science program.

FSCI 4050U Law for Forensic Investigators
This course explores aspects of criminal law, with the goal of understanding forensic science within a legal context. Topics include: structure of the courts system and the criminal procedures used in it, roles of the forensic scientist in criminal procedures, rules of evidence, role of expert witness. Lecture: 3hrs, Other: 2hrs Bi-weekly. Prerequisite: Good standing in year 4 of the Forensic Science program.

FSCI 4060U Advanced Topics in Forensic Science
The course builds on techniques covered previously throughout the program and provides an opportunity for students to compare and critically evaluate the use, strengths and limitations of such techniques in forensic cases. In addition, students will be provided with the opportunity to study a range of high technology and emerging forensic science advances, such as electronic, computerized and Bayesian statistical methods for the analysis, interpretation and critical evaluation of forensic evidence. Tutorials: 3hrs. Prerequisite: Good standing in year 4 of the Forensic Science program.

Elective
Students may select science or liberal studies electives from a variety of courses offered by other schools in UOIT or through Trent University at Durham. Prerequisite(s): As required for selected subject

Elective
Students may select science or liberal studies electives from a variety of courses offered by other schools in UOIT or through Trent University at Durham. Prerequisite(s): As required for selected subject

COMPULSORY LIBERAL STUDIES ELECTIVE COURSE

BUSI 2000U Collaborative Leadership
This course intends to develop critical employability skills such as teamwork, leadership, project management, communication skills and intercultural understanding, and will focus students' learning on topics related to interactions with others in personal, educational and professional contexts. Students will engage in collaborative and dynamic learning activities involving direct and practical application of the content/skills critical to professional success. They will explore the practice and impact of leadership, negotiations and teamwork in organizations and communities. These practices will be examined in a variety of settings as described in both popular and academic writings. Learning activities will be directed toward: developing leadership for exceptional performance, obtaining commitment to goals and standards, negotiating and resolving conflict, inter-cultural communications, ethical practice, and relating with others in team environments. Lecture: 3 hrs.
General Electives

Students may select general electives from a variety of science and liberal studies courses offered by other faculties at UOIT or through Trent University at Durham. Possible courses and descriptions are provided below.

A Sampling of Electives Available From Other Faculties at UOIT

PHIL 1040U Philosophy: Social and Political Issues. This course provides a comprehensive assessment of classical and contemporary conceptions of justice. The focus will be on the Libertarian, the Socialist, the Liberal, Democratic, the Communitarian, the Feminist, the Post-modern, and the Environmental views of justice. Lect: 3hrs.

POSC 1010U Political Science. This introductory course provides an introduction to the democratic system of government in Canada. It describes the organization of the three levels of government; federal, provincial and municipal. It introduces the political institutions and practices with emphasis on the constitution, parliament and cabinet. The interaction of each level and the democratic and legislative process is discussed. The course includes the services of each level of government and the impact on the justice system. Lect: 3hrs.

PSYC 2010U Developmental Psychology. This course is a comprehensive study of human development across the life-span from a developmental psychology perspective. The course examines developmental processes and milestones of the individual from conception through late adulthood, with particular emphasis on behavioural and cognitive development. Students will be introduced to the major psychological theories, theorists, and controversies in the field of human development.

SOCI 1000U Introductory Sociology. Sociology is the study of people and how they interact with each other and various social groups. This course deals with the study of people's lives, their relationship to society as a whole, and how people are affected by the society in which they live. The concepts, theories and methods of the discipline will be introduced and discussed with particular emphasis on the dynamics of Canadian society and Canadian social problems. Lect: 3hrs.

JSTS 1000U Introduction to Criminal Justice. This course provides an analysis of historical and contemporary theory and practices of the criminal justice system. Beginning with the analysis of crime data, the course will also examine the role and function of the each component of the criminal justice system: the police, the court system, corrections, prisons and alternatives to prisons. The course will also include a section on victimology, as well as sections on the criminal law, and theories of crime causation. Lect: 3hrs.

JSTS 1260U Introduction to Canadian Legal System. This course investigates the nature, purpose, scope, sources and basic principles of law within its historical and contemporary contexts. The historical and constitutional foundations of legal concepts and due process of law are studied. Current policy and legislation such as the legislative policy inherent in The Charter of Rights and Freedoms, federal and provincial human rights codes, family law, criminal law and civil law will be examined. Students will be guided to understand the complex interrelationship between the law and the various components of Canadian society. The roles of lawyers, judges and others involved in the integrated legal system will be presented. Lect: 3hrs.

JSTS 1600U Criminal Law. This course investigates the nature, purpose, scope, sources and basic principles of law within its historical and contemporary contexts. The historical and constitutional foundations of legal concepts and due process of law are studied. Current policy and legislation such as the legislative policy inherent in the Criminal Code, the specific offences and categories in the Criminal Code, the Young Offenders Act, Narcotic Control Act will be examined. The roles of lawyers, judges and others involved in the integrated legal system will be presented. Lect: 3hrs.
JSTS 1420U Ethical Reasoning and Critical Thinking. This course focuses on ethical dilemmas faced by individuals as citizens and professionals. It helps students to clarify their values and establish a framework for ethical decision-making. It includes the concept of critical thinking or the ability to interpret complex ideas and appraise the evidence offered in support of an argument to better resolve problems or issues. Ethical issues, which relate to a wide variety of concerns, are examined. Students will examine a variety of professional ethical codes and apply ethical decision-making models to dilemmas in their personal and professional lives. Lect: 3hrs.

JSTS 1610U Customs and Immigration Law. This course covers the role of Customs and Excise as a part of the Revenue Canada mandate. Relevant legislation such as the Customs Act and the Narcotic Control Act are examined. Current issues surrounding Customs policies as well as internal regulatory procedures (e.g., search and seizure, appeal procedures and citizens rights). Other issues covered are those that relate to the Customs and Immigration authority, such as primary duties and relevant sections of the Criminal Code. Lect: 3hrs.

JSTS 2190U Issues in Diversity. Students will identify and critically analyse issues of diversity. The course will incorporate an inclusive approach to diversity. Learners will focus on topics pertaining to the achievement of equity in various social settings, including but not limited to race, gender, ethnicity, class and social orientation. This course will deal with social and legal definitions of diversity and students will identify possible strategies for community empowerment. Lect: 3hrs.

JSTS 2490U Issues in Family. The purpose of this course is to introduce the student to problems in the family and their relation to the justice system. In addition to gaining knowledge of the theoretical perspectives used to study the family, the student will also learn about such issues as the relation between family and work, parenting, family interactions, and legal issues within the family. The legal issues to be discussed include family violence, divorce and remarriage, and the creation of social policies as they impact on the family. Lect: 3hrs.

BUSI 1600U Management of the Enterprise. This introductory management course is divided into four parts. Students will be introduced to the core concepts and context of management, enhancing their understanding of how the business environment affects the practice of management. The functions of management will be reviewed, including key topics, issues and problems within the basic management activities of marketing, organizational behaviour/human resources, operations management and information technology, accounting, and finance. The latter components will synthesize the ideas presented in earlier classes by introducing fundamental elements of business strategy, followed by advanced topics in management, including small business, entrepreneurship and E-business. 3cr, 3 lec.

BUSI 1650U External Environment of Business. This course provides an introduction to the national and international context of Canadian political, economic, legal and business activity. It presents a sampling of the most relevant issues facing managers in business, labour and public sector organizations. Emphasis is placed on developing an understanding of Canada's competitive position today and of the historical background and current influences on this position. Topics covered include an overview of the historical and contemporary socio-economic events that shape the Canadian and global economies today, the changing world scene, the attractiveness of various world markets, the relative position of Canada vs. the world with respect to labour, capital, and technology, different measures of competitiveness, as well as policy recommendations. 3 cr, 3 lec. Prerequisite: BUSI 1600U (Management of the Enterprise).
**ECON 2010U Microeconomics.** As a first course in economics, microeconomics introduces the student to principles such as scarcity, opportunity cost, diminishing returns, elasticity, industrial organization, economies to scale, and concentration. The course begins with an introduction to the market and price determination. The course reviews the cost structure of the firm in both the long and short run. Price and quantity decisions for firms in various competitive situations are discussed. Canada’s Competition Act is examined. The course also analyses the markets for factors of production. 3 cr, 3 lec.

**ECON 2020U Macroeconomics.** As an introductory course in economics, macroeconomics introduces the student to principles such as unemployment, inflation, economic growth, the multiplier, equilibrium, fiscal policy, and monetary policy. The student builds on the knowledge of the market from microeconomics and proceeds to an understanding of aggregate demand and supply. The principle of money and banking are introduced along with the role of the Bank of Canada. The course also introduces the student to the principles of international trade theory. 3 cr, 3 lec. Prerequisite: BUSI 2010U.

**BUSI 1830U Introduction to Programming.** This course introduces students to general computer programming principles. Topics include basic computer hardware and software concepts, problem analysis, design of algorithms and programs, the selection of data types, basic I/O, repetition and flow control, decision-making, and optionally, principles of object-oriented languages. The course uses a programming language such as Java or C. Applications to business, science and engineering are illustrated. 3 cr, 3 lec. Cross listed: ENGR 1200U.

**BUSI 2050U Economics for Professionals.** Aspects of theoretical and applied economics relevant to professionals. Fundamental principles in both micro- and macroeconomics are introduced. Microeconomics topics include scarcity, opportunity cost, diminishing returns, elasticity, industrial organization, economies of scale and concentration. Macroeconomics topics include unemployment, inflation, economic growth, the multiplier, equilibrium, fiscal policy and monetary policy. The principle of money and banking are introduced along with the role of the Bank of Canada. Applied economics topics covered include cost concepts, time value of money, comparison of alternatives, depreciation, tax considerations, economic analysis of projects, break-even, sensitivity and risk, and decision models. 3 cr. 3 lec.

**EDUC 1200U History of Science and Technology.** This course will focus on the history and philosophy of science and engineering with special emphasis on scientific technology and the cultural significance of technology to civilization. The course will include critical analyses and will pay significant attention on the nature and problems of industrial technology, benefits and risks of technological progress, and issues around intellectual property. Throughout, students will examine the history and philosophy within the context of science and engineering as learned professions. 3 cr, 3 lec.

**EDUC 1470U Impact of Science and Technology on Society.** In this course, students will engage in analyses of scientific and technological developments from the perspective of broad social impacts. Special attention will be paid to controversial issues currently receiving media attention, but the major emphasis will be on ways of thinking critically about both the remediation of already existing problems (e.g., toxic substance cleanup) and the prevention of future problems (e.g., environmental impact analyses and or economic impact analyses). Canadian examples will be of primary concern, but students will also learn to think about impact globally since large-scale problems do not respect political boundaries. 3 cr, 3 lec.
Liberal Studies Elective Offerings Available Through Trent University at Durham

Students at UOIT may also select electives from courses offered by Trent University at Durham in the current year.

A range of elective offerings are available in the following disciplines:

- Ancient History and Classics
- Anthropology
- Canadian Studies
- Cultural Studies
- Economics
- English
- Environmental and Resource Science / Studies
- Geography
- History
- International Development Studies
- Modern Languages
- Native Studies
- Philosophy
- Political Studies
- Psychology
- Sociology
- Women's Studies

Specific offerings for the 2004/05 Academic Year can be viewed at the Trent at Durham website:
www.trentu.ca/jbc/inside/course_offerings/fall/viewCourses_OSHAWA.html

Information about the agreement between Durham College/UOIT and Trent University is provided on the pages that follow.
JOINT NEWS RELEASE
DURHAM COLLEGE/UNIVERSITY OF ONTARIO INSTITUTE OF TECHNOLOGY
AND TRENTE UNIVERSITY

PARTNERSHIP AGREEMENT ENDORSED BY BOARDS OF GOVERNORS
10-year framework to serve students in Durham Region

FOR IMMEDIATE RELEASE
MARCH 27, 2002

A partnership agreement has been approved by the Boards of Governors for Trent
University and Durham College, the latter also operating on behalf of Canada's newest
university, University of Ontario Institute of Technology (UOIT) until their final Act has
been passed in the Legislature this spring. This agreement establishes a framework for
the delivery of programs to maximize university-level opportunities for students.

The 10-year renewable agreement is effective August 1, 2002. A central principle is to
build on the best niches of the three postsecondary partners to support a broad range of
programs for students.

Both Boards acknowledge the strong support received from the Ministry of Training,
Colleges and Universities in recognizing the partnership among the institutions. The
Ministry has reaffirmed the objective of providing Ontario students with access to
postsecondary educational institutions of high quality both by maintaining the strength of
existing institutions in the system and through the establishment of University of Ontario
Institute of Technology (UOIT). Funding arrangements have been confirmed which will
support the arts and science programs that Trent will continue to deliver in the Durham
Region.

The agreement provides for distinctive and complementary roles for each institution. The
University of Ontario Institute of Technology (UOIT) will proceed to develop programs
leading to university degrees, in keeping with its mission to provide market-driven
programs as announced May 9th, 2001. Nine degree programs are planned to start
September 2003 in time for the double cohort including Bachelor of Science in Nursing
(B.Sc.N.), Bachelor of Engineering (B.Eng.) Specialty in Nuclear Engineering, Bachelor
of Science Radiation Physics (B.Sc.), Bachelor of Business Administration (B.B.A.),
Bachelor of Arts in Integrated Justice Studies (B.A.), Bachelor of Engineering (B.Eng.)
Manufacturing Engineering, and Bachelor of Education/Bachelor of Science
(B.Ed./B.Sc.). Trent University will continue to offer degree programs in general arts and
science, reflective of its primary mission, with majors in Anthropology, Biology, Computer
Studies/Science, Cultural Studies, English Literature, Environmental Studies/Sciences,
History, Psychology, and Sociology. Enrolment in these Trent programs at Durham/UOIT has grown 32% over the past two years demonstrating an overwhelming market demand in the area. Trent will significantly expand its student population over the next few years.

Bonnie Patterson, President of Trent University emphasized that Trent is proud of its 30-year presence in the Durham Region. "The new framework agreement we are announcing is a natural outcome of the Ministry’s four-year pilot program which provided stable funding for Trent’s involvement in the University Centre at Durham. With the conclusion of that pilot program, the new agreement will build on the unique strengths that UOIT will offer to students as a new institution and the outstanding liberal arts and science programming provided by Trent University for three decades. Students will be the prime beneficiaries of the quality program offered by both institutions," says Patterson.

Gary Polonsky, President of Durham College and University of Ontario Institute of Technology (UOIT), is confident that the agreement will enhance educational opportunities for students. "Durham College and Trent University have been long-standing partners and I’m very pleased that Trent wants to continue that relationship with the University of Ontario Institute of Technology," says Polonsky. "I know that all three institutions hold students in the highest esteem and, to that end, we will work together to maximize a postsecondary experience that will be renowned throughout the country."

Background

- In May 2001 the province announced a $60-million infrastructure investment in a new postsecondary institution in the Durham Region with a mission to offer career-oriented and market-driven degree programs. Plans are well underway to start serving students in Fall 2003 and it is anticipated that within five years, enrolment at the University of Ontario Institute of Technology will total well over 5,000 full-time students.
- Durham College, Ontario’s fastest growing college, will continue to offer high quality diploma programs and services to students and in partnership with University of Ontario Institute of Technology will work on seamless transition strategies for academically prepared students interested in moving between college and university.
- Trent University continues in its mission to deliver outstanding liberal arts and science education with award-winning faculty in small class settings. Trent consistently places number one in Central Canada among primarily undergraduate universities in Ontario in the annual Maclean's ranking and is known for its award-winning faculty and emphasis on interdisciplinary studies.

For more information contact:

Gary Polonsky, President, Durham College and University of Ontario Institute of Technology, (905) 721-3145.

Bonnie Patterson, President and Vice Chancellor, Trent University, (705) 748-1011, 1347.
6.7 Work Experience Required for Degree Completion

Since work experience is not required for the completion of the B.Sc. in Forensic Science, Sections 6.7.1 and 6.7.2 are not applicable to this proposal.
7. PROGRAM DELIVERY STANDARD

7.1 Quality Assurance Policies

UOIT is committed to quality standards in program development and delivery. Policies and procedures are in place to ensure that the individual courses and programs are evaluated on a regular basis and that feedback is utilized to support continuous improvement.

All students will participate in an orientation program, which will be designed to ensure that they are integrated into university life and prepared for the expectations of their respective programs. This will take place before the normal start date of classes, incorporating social activities organized by the Student Life Coordinator and Student Council. Faculty participation and leadership will be required.

This orientation week will also be used to assess students’ written and oral communication skills, to help students learn to use the laptop computers comfortably and efficiently, and to provide students in need of assistance in the areas of communication and/or computer skills with remedial supports. For example, students with highly developed skills in these areas may be paired with students who have low levels of computer knowledge and comfort, in a peer-support arrangement that will continue throughout the first year of the program.

Policies and practices are in place to support faculty and students in the use of online learning components of UOIT programs. These are described in SECTION 7.3.1

7.2.1 Policy on Student Feedback

Course Evaluations - Policy

The main purposes of seeking student evaluation of teaching are to assist faculty members in monitoring and developing their effectiveness as teachers and to assist Faculties in monitoring the quality of their curricula. Important additional purposes include identifying professional development needs, assisting in decisions regarding tenure and promotion, assisting in identifying exceptional teachers for teaching awards and documenting exceptional teaching.

On at least one occasion per course, feedback is provided to all instructors in the form of a University-approved questionnaire, the results of which go to the Faculty in the person of the Dean to support curriculum review and tenure and promotion processes, and to the instructor. The University also strongly encourages instructors to make use of ongoing course evaluation and to inform students as to how previous feedback has led to modification in the teaching of the course. Courses in which five students or fewer are enrolled need not be evaluated.
Evaluation Instrument

On at least one occasion per course, all instructors shall arrange for their classes to complete an online survey that allows students to evaluate the course and instruction. The administration of the University-approved questionnaire does not preclude instructors from gathering and benefiting from student feedback independent of this exercise.

The survey is designed to:

- allow for the quantification of some of the results;
- provide feedback on both course content and the instructor's pedagogical effectiveness;
- assess the effectiveness of the University's special mandate to provide technologically-mediated teaching;
- distinguish feedback for various instructors when more than one is involved in the course; and
- preserve student anonymity.

Logistics

The administration of the survey shall have the following features:

- the date on which the survey is to be administered to students is announced to the class in advance;
- the date for the evaluation is set reasonably close to the end of the course; and
- a sufficient amount of class time is allowed for the completion of the survey.

A separate document will outline the procedures for the administration of course evaluations.

Availability of Results

The results of the evaluations are provided to the instructor as soon as possible after the submission of final marks. In addition, the results shall be made available to the following:

- Curriculum committees and other review bodies/individuals: for purposes of curricular review;
- Deans: for purposes of mentoring faculty, allocating merit pay and selecting candidates for teaching awards; and
- Tenure and promotion committees: for their mandated purposes.

Faculties may decide to disseminate the results more broadly. The University encourages Faculties to make quantifiable results available to students.

Approved by UOIT Academic Council on January 21, 2004

The draft of procedures for obtaining student feedback on courses and instruction and the draft of the instrument can be found on the following pages. Plans are underway to develop student satisfaction indicators and the related questionnaires. The student satisfaction surveys will be conducted annually in semester two. UOIT is
working with Compustat Consultants, a Canadian data management service, to finalize instruments, process the information and provide aggregate results for all student feedback surveys.

**Procedures for the Administration of Course Evaluations**

Students will be asked to provide their opinions on such things as course organization, course content and the delivery of learning activities by the professor, lab instructor and/or tutorial leader. The survey will be completed by students online using their laptops during a scheduled class period.

1. Course evaluations will be conducted towards the end of the semester, normally during the eleventh week of classes. In some instances, the timing of the administration of the evaluations may have to be adjusted to accommodate course activities. If the evaluation cannot be administered during the designated week, the faculty member should contact the Provost's Office so that an alternative date can be scheduled.

2. Deans will be asked to confirm the list of teaching assignments provided by the Registrar's office for all sections of courses, labs and tutorials in their school.

3. All course directors will be asked to set aside twenty minutes during the main course meeting of the designated evaluation week for students to complete the online survey. Faculty will be informed via email about the designated time for the completion of the survey for their courses.  

4. During the week prior to the evaluations, faculty members will be provided with specific instructions, such as the survey URL and login and password information.

5. One week prior to the administration of evaluation, students will be alerted by email about the process and encouraged to complete the surveys.

6. Faculty members are asked to remind students to bring their laptops to class during the evaluation week.

7. Student feedback will be completely anonymous and confidential. Students will access and submit the survey using a remote URL, and will use a secure ID and password. Students should be encouraged to feel secure about this process. To this end, once the instructions about accessing the online instrument have been delivered, faculty members are asked to leave the classroom when the surveys are being completed.

8. Results will be provided to the Deans after the final submission of grades in the semester.
STUDENT FEEDBACK FOR FACULTY AND COURSE EVALUATION

Introduction:
This questionnaire is used to obtain student feedback in order to monitor and improve the quality of teaching and learning at UOIT. You will be asked to give feedback about the course, the professor, and laboratories or tutorials, if applicable. This survey is completely anonymous and confidential. An external company will process the information and provide results to UOIT. The questionnaire is in three sections. SECTION A asks you for feedback about courses and where applicable, tutorials and laboratories, and SECTION B asks for feedback on the professor. In SECTION C you may provide additional written comments.

Thank you. Your participation in this process is very important.

For each statement please select the response that most accurately reflects your opinion.

- Strongly agree: a.
- Agree: b.
- Neither Agree nor Disagree c.
- Disagree: d.
- Strongly disagree: e.

<table>
<thead>
<tr>
<th>SECTION A 1: The following questions ask for feedback on this course. Course title</th>
<th>a.</th>
<th>b.</th>
<th>c.</th>
<th>d.</th>
<th>e.</th>
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</thead>
<tbody>
<tr>
<td>1. The course outline on Web CT is clear and helpful.</td>
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<td>2. The course activities are appropriate to the learning outcomes.</td>
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<td>3. The topics and units are well sequenced within the course.</td>
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<td>4. Learning materials such as textbooks and handouts are directly related to course content.</td>
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<td>5. The course takes full advantage of the laptop hardware and software.</td>
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<td>6. The course effectively uses web-based resources.</td>
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<td>7. The workload in this course is heavy when compared to my other courses.</td>
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<td>8. Methods of evaluation (e.g. tests, exams, assignments) are fair.</td>
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<td>9. This course makes an important contribution to my program of study.</td>
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<tr>
<td>10. Overall, the quality of this course is:</td>
<td>Outstanding</td>
<td>Above Average</td>
<td>Average</td>
<td>Below Average</td>
<td>Poor</td>
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</table>

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<table>
<thead>
<tr>
<th>SECTION A- 2 The following questions ask for feedback on this laboratory. Name of Instructor</th>
<th>a.</th>
<th>b.</th>
<th>c.</th>
<th>d.</th>
<th>e.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The laboratory activities correspond to the learning outcomes.</td>
<td></td>
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<td></td>
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<tr>
<td>2. The laboratory activities are well sequenced within the course.</td>
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<tr>
<td>3. Laboratory materials such as manuals and handouts are helpful.</td>
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<td>4. The workload for the laboratory component is appropriate.</td>
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<tr>
<td>5. The instructor conducts the laboratory sessions in an organized and well-planned manner.</td>
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<td>6. The instructor is effective as a laboratory teacher.</td>
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<td>7. The laboratory makes an important contribution to my program of study.</td>
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<tr>
<td>8. Overall, the quality of this laboratory is:</td>
<td>Outstanding</td>
<td>Above Average</td>
<td>Average</td>
<td>Below Average</td>
<td>Poor</td>
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</tbody>
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<thead>
<tr>
<th>SECTION A- 3: The following questions ask for feedback on this tutorial. Name of Instructor:</th>
<th>a.</th>
<th>b.</th>
<th>c.</th>
<th>d.</th>
<th>e.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The tutorial learning activities correspond to the learning outcomes.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2. The tutorial activities are well sequenced within the course.</td>
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<tr>
<td>3. Tutorial materials such as handouts and problems are helpful.</td>
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<tr>
<td>4. The workload for the tutorial component is appropriate.</td>
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<tr>
<td>5. The tutorial instructor conducts the tutorial sessions in an organized and well-planned manner.</td>
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<tr>
<td>6. The tutorial instructor is an effective teacher.</td>
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<tr>
<td>7. The tutorial makes an important contribution to my program of study.</td>
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<tr>
<td>8. Overall, the quality of this tutorial is:</td>
<td>Outstanding</td>
<td>Above Average</td>
<td>Average</td>
<td>Below Average</td>
<td>Poor</td>
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</table>
SECTION B: The following questions ask for feedback for the professor in this course.

Name of Professor:

<p>| | | | | |</p>
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<tr>
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<tbody>
<tr>
<td>1.</td>
<td>The professor clearly explained the course outcomes and grading scheme at the beginning of the course.</td>
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<tr>
<td>2.</td>
<td>The professor conducts class sessions in an organized and well-planned manner.</td>
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<tr>
<td>3.</td>
<td>The professor presents material in a clear and easy-to-understand manner.</td>
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<td>4.</td>
<td>This professor demonstrates thorough knowledge of the subject.</td>
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<td>5.</td>
<td>The professor presents the course material with enthusiasm.</td>
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<td>6.</td>
<td>The professor encourages student discussion and participation.</td>
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<td>7.</td>
<td>The professor responds effectively to students’ questions.</td>
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<tr>
<td>8.</td>
<td>The professor effectively uses learning materials such as textbooks and handouts.</td>
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<tr>
<td>9.</td>
<td>The professor returns tests and assignments within a reasonable time.</td>
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<tr>
<td>10.</td>
<td>The professor provides useful feedback on assignments.</td>
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<tr>
<td>11.</td>
<td>The professor uses a variety of teaching methods and materials to accommodate various learning styles.</td>
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<tr>
<td>12.</td>
<td>The professor is available for outside-class consultation.</td>
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<tr>
<td>13.</td>
<td>The professor treats students with courtesy and respect.</td>
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<tr>
<td>14.</td>
<td>The professor maintains control of class.</td>
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15. Overall, the professor in this course is: Outstanding  
    Above Average  
    Average  
    Below Average  
    Poor

SECTION C: Additional Comments

1. Please use the space below to provide any additional comments you may wish to make about the quality of instruction or about any aspect of this course. Unlimited additional space is provided for students to comment.
Student Satisfaction Surveys

The University is currently conducting Student Satisfaction Surveys which ask for student feedback on University services and facilities. These are also conducted online using the services of Compustat Consultants. The instruments and results can be made available at site visits.

7.3 Academic Community

UOIT is committed to providing innovative and market-driven programs through excellence in teaching and learning, value-added research and “vibrant student life.” The physical design of the University environment will provide many spaces for groups to meet and interact, for academic and social purposes. The technological links available to students will ensure that a network of communication and support among students and between students and University resources is established and strengthened during their years at UOIT. Support services, student government and clubs, residence activities and varsity and intra-mural athletics will provide students with opportunities to interact with individuals outside their program area and to support their learning and development in all areas – academic, physical, social, emotional and spiritual.

7.3.1 Online Learning Policies and Practices

As part of its mission, UOIT seeks to advance the highest quality of learning, teaching, and professional practice in a technologically enabled environment. All full-time students enrolled at UOIT are required to lease a standardized IBM Thinkpad. This laptop is preloaded with a standard set of software tools for general computing needs and specialized software for use by particular programs and faculties. The hardware configuration and campus infrastructure ensure that students have both wired and wireless access to the university network and central information technology (IT) resources. Moreover, the development of web services ensures that students also have access to academic resources such as library resources, our course management system (WebCT), bookstore services, etc.

All UOIT courses include online resources and activities to supplement the traditional face-to-face delivery format. This component can take many forms: class preparation and readings, research and access to resources, communication with peers and the instructor and in-class exercises, quizzes or simulations. Individual course websites are an integral resource component in every course.

Over time, it is the University's intent to develop quality learning opportunities which provide both on-campus and remote access for students engaged in full- and part-time studies. The primary purpose of the laptops in the University's first year of operation was to enrich the face-to-face residential academic experience. Distance learning options were to be added as programs matured.

For the academic year 2004/05, a number of UOIT's Faculties are proposing to offer courses to full-time residential students using a hybrid model of delivery that combines online and face-to-face components. Naturally, the extent to which online activities are integrated into individual courses is dependent on a number of factors, including: the specific discipline, the architecture of the course, the types of factual and experiential activities, and the technical proficiency of the professors hired to teach the courses. UOIT is confident that it has an adequate infrastructure and
system of support to accommodate this model and that appropriate policies are in place to facilitate a successful transition to hybrid course delivery.

Guiding Principles

- UOIT will provide online learning components of high academic quality, comparable to those offered in a traditional face-to-face delivery format.
- UOIT will provide the necessary services to support and enhance its ability to design and deliver effective hybrid courses.
- UOIT will support faculty members who choose to offer their courses through the hybrid course delivery mode.

The Faculty of Science plans to move toward this hybrid mode in the delivery of its courses in the proposed Forensic Science Program. These plans have been discussed in Section 6.6.2.

ACADEMIC QUALITY ASSURANCE

UOIT aims to provide online learning components of high quality, comparable to those offered in the traditional face-to-face format. This goal is to be achieved in the following ways:

Quality of Courses
A common format is used to provide students with information about course outcomes and requirements for all courses, including online components. Common elements include: Course descriptions, syllabi, textbook requirements, student evaluation, learning outcomes, grading scale and timelines.

Communication
Faculty are expected to incorporate requirements for students to communicate with the course professor and peers via email, chat and/or discussion boards. This requirement will be clearly explained in the course syllabus.

Course Development Process
New courses with online components and changes to existing campus-based courses to include varying amounts of online learning activities must be approved by the Faculty Council of the respective Faculty. This body will report its plans to the Curriculum Planning and Review Committee of the University's Academic Council. Assistance in the development process is provided to faculty by the Centre for Academic Excellence and Innovation (CAEI).

Course Evaluations
All courses are included in a regular course evaluation process at the end of each semester. Students complete surveys which address the quality and effectiveness of course content and instruction, as well as resources and support services related to online learning components. Results are shared with faculty to enable them to incorporate feedback into course planning and implementation.
Faculty Expertise
Faculty hired by UOIT are expected to have skills and experience in the integration of technology into teaching. In addition to appointment, review, renewal, and tenure policies, UOIT Employment Policies for Academic Staff include expectations for faculty members to adopt modern information technology to facilitate learning.

SUPPORT SERVICES

The special mission of the University of Ontario Institute of Technology (UOIT) is to support Web-centric and distance education and, more specifically, to utilize information and communication technologies (ICT) to enhance student outcomes. A variety of services have been implemented to support students in their use of ICT for learning and to assist faculty to adopt new technologies for teaching.

Facilities/Equipment/Funding

The University provides financial support for a diversity of learning delivery components and courses - i.e. computer upgrades, Internet connectivity, technical support personnel, laboratory space and furniture, etc. through a variety of services across the University.

Other investments include:

- Expansion of the UOIT data network to support ubiquitous computing
- Investments to build smart classrooms equipped to support ubiquitous access to network and academic resources
- Continuing and expanding resources for faculty development and course development through Centre for Academic Excellence and Innovation

To ensure students receive the appropriate technologies and that they continue to receive the services and support they require, UOIT has entered into a business agreement with three industry leaders. A long term agreement has been established with IBM to provide computer technology, Nortel Networks to provide networking and wireless services and Bell Canada to provide network installation and broadband services. In addition to these agreements, an agreement with Microsoft has been implemented to deliver the software most commonly needed by students.

Student Services to Support Online Learning Activities

Registration
All UOIT students register on-line for courses. This service ensures that students enroll in appropriate courses, avoid long lines, and are able to register for courses from any location with Internet access. Upon registration, most students pay tuition through on-line banking services. Students can also request transcripts and tax receipts and engage in other financial transactions across the Internet. Other registrarial services such as checking grades and academic status, reviewing final marks or applying for UOIT scholarships are available online.
**Student Orientation and Success**

UOIT is committed to ensuring that students understand their roles and responsibilities in a hybrid learning environment and have the skills and tools they need to be successful. All students are provided with an email account. They are required to participate in a training session which outlines the care and use of laptops, as well as providing an orientation to e-learning and to online library resources. In addition, an extensive set of technical self-help resources is available on the laptop through a single desktop icon.

**Textbooks and Materials**

Students have access to a learning environment that supports interaction with faculty and other students while also ensuring that all course materials can be found in a single location. Where textbooks, print materials or other resources are required for a course, students may order these supplies online and have them delivered, or they may pick them up from the campus bookstore. The course Website will clearly identify the materials for which students will be responsible and the ways in which they can be accessed.

**Mobile Computing Centre**

The Mobile Computing Centre (MCC) is the on-site service centre from which students obtain their laptops and the suite of software appropriate to their respective programs. Personal assistance in configuring, installing and testing software is provided to every student. When students are experiencing technical problems and/or repairs are required, the MCC offers technical support; this service complements the existing drop-in or call-in helpdesk services provided by UOIT. The MCC provides telephone support to students on an extended day basis, including evenings and weekends. A single toll-free number is available for students to access information and support pertaining to their online studies.

**Submission of Assignments**

Often students find submitting assignments a difficult process requiring the attachment of files to e-mail messages or sending printed assignments by traditional mail services, often with reduced assurance that the faculty member has received the assignment. Consequently, students are able to submit assignments both in person as well as through the assignment submission tool in WebCT. This facility allows students to submit assignments from anywhere in the world with Internet access.

**Academic Resources**

Academic resources such as registration information, schedules, booklists, course outlines, lecture notes, assignment criteria, grades, exam schedules, transcripts, etc. are readily available to students through the University website or individual course websites. The online format allows students to interact with peers to share ideas, ask questions, participate in study groups, complete group assignments and offer general support to one another as they engage in the learning process through newsgroups, email, discussion groups, websites and chat facilities. Students benefit by having the resources to be able to learn by doing. Skill drills and self-testing provide valuable learning opportunities for students. Of particular value to students is the posting of test results, problem solutions and marking notes soon after tests and exercises have been written. Students also access slides, notes, tips, and sample spreadsheets before or after classes, allowing them more time to focus on learning and less time on writing notes in class. Every student is able to collaborate directly with fellow classmates, fellow students, outside contacts, faculty members and content experts directly. This can be done through newsgroups, email, discussion groups, web sites and chat facilities.
Library/Learning Resources
The library serves as a focal point of academic studies. In accordance with the
University's mandate to serve as a laptop university with "round the clock" accessibility
to resources, the Library will purchase significant holdings and make its services
available in electronic format wherever possible. The mobile program can deliver these
electronic resources from anywhere on the network directly to each student's laptop. The
investment and acquisition of faculty specific databases provide students with access to
rich academic and research resources across the Internet. Further details are provided in
Section 8.8.1 of this submission.

Access to Other University Services
The Web-centric environment also enables students to access information about a
wide variety of student services and non-academic resources available to them. They
can link directly to such University services as the Health and Wellness Centre,
Career and Employment Services, Financial Aid, Services for Students with
Disabilities, Learner Support Centre, student government, etc. Regular updates
regarding social and athletic events, student clubs, guest presentations and special
events ensure that all students are able to take advantage of the 'vibrant student life'
which is a key element in the vision of UOIT.

FACULTY SUPPORT THROUGH THE CENTRE FOR ACADEMIC EXCELLENCE
AND INNOVATION (CAEI)
To support faculty to teach online and students to learn online, UOIT has adopted
and centrally supports WebCT as its learning management system. Integration of
WebCT with the University student information system supports a single username
and password login for students, staff and faculty.

To support faculty adoption of web-centric learning on campus and development of
hybrid delivery models, the Centre for Academic Excellence and Innovation (CAEI)
provides services such as instructional design support, multimedia development,
assistance in building WebCT course sites, Webpage authoring, and capturing,
segmenting and streaming of video across the Internet for instructional purposes.
CAEI also provides training for faculty for a variety of content development tools and
in the use of a variety of application software products.

To ensure the highest quality of teaching learning resources and pedagogical
practices, CAEI organizes "quality circles". These quality circles will allow faculty to
share instructional practices and program and course materials with colleagues and
staff of the CAEI to support reflective practice and continuous improvement to
instructional practices and to learning materials.

UOIT, through CAEI, is committed to monitoring the implementation of hybrid delivery
models, Web-centric learning and the mobile computing program on- and off-
campus. Weekly meetings of key players from Information and Technology Services
and the Mobile Computer Centre (MCC) will be held to monitor progress and
incorporate student feedback into ongoing operations.
Partnership between UOIT, IBM and Bell Canada

A shared services business model has been established between UOIT and Bell Canada for the provision of data network equipment as well as network management services, including security, cabling and wireless applications. In addition, Bell Canada has made a commitment to providing opportunities and services to support student and faculty development.

IBM has also agreed to provide IBM products, software and solutions for the laptop program at discounted prices.

*The organization has on file and available upon request copies of current software, hardware, and systems agreements that pertain to the delivery of electronic/online learning.*

7.3.2 Academic Community Policies

UOIT is strongly committed to the development of a collaborative web-centric environment to enhance student learning and involvement in university life. Such an environment will enable the creation of a community of inquiry which promotes closer relationships between and among students and faculty, students and their peers, and UOIT and its communities. It also includes access to a rich set of digital learning resources.

Each student will have the benefit of wireless internet access on campus. This will provide opportunities for collaborative learning, electronic communities, instant communication and a more productive relationship between faculty and students. All students will have an equal opportunity to communicate with faculty, access course materials, do research and prepare quality presentations without having to wait for on-campus computers.

Students will be able to access a wide variety of information related to academic, social, athletic and spiritual aspects of their university experience. Academic resources such as registration information, schedules, booklists, course outlines, lecture notes, assignment criteria, grades, exam schedules, transcripts, etc. will be readily available to them through the University website or websites of individual courses and professors. The online format allows students to interact with peers to share ideas, ask questions, participate in study groups, complete group assignments and offer general support to one another as they engage in the learning process. Students will benefit by having the resources to be able to learn by doing. Skill drills and self-testing will provide valuable learning opportunities for students who learn best from these modes. Of particular value to students is the posting of test results, problem solutions and marking notes soon after tests and exercises have been written. Students also obtain postings of slides, notes, tips, and sample spreadsheets before or after classes, allowing them more time to focus on learning and less time on writing notes in class. Every student will be able to collaborate directly with fellow classmates, fellow students, outside contacts, faculty members and content experts directly. This can be done through newsgroups, email, discussion groups, websites and chat facilities.

The library will be a focal point of academic studies. It will provide traditional and electronic resources accessible by students in the library. The mobile program can also deliver these electronic resources from anywhere on the network directly to each student’s laptop.
The web-centric environment also enables students to access information about a wide variety of student services and non-academic resources available to them. They can link directly to such University services as the Health and Wellness Centre, Career and Employment Services, Financial Aid, Services for Students with Disabilities, Peer Tutoring, Learner Support Centre, student government, etc. Regular updates regarding residence activities, social and athletic events, student clubs, guest presentations and special events ensure that students are able to take advantage of the 'vibrant student life' which is a key element in the vision of UOIT.
8.0 CAPACITY TO DELIVER STANDARD

8.7 Enrolment Projections and Staffing Implications

Projected Enrolment and Faculty Growth

Projected steady-state enrolment is 48 students per year; if resources permit, this number may be increased. Due to its expected popularity with students, based on the experience with similar programs in the UK (see Section 9.2), the steady-state enrolment is expected to be achieved immediately in the year the program is first offered.

The projected faculty growth supporting the program is given in the following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Science Faculty</td>
<td>1</td>
<td>1</td>
<td>.75</td>
<td>0</td>
</tr>
<tr>
<td>New Social Science Faculty</td>
<td>0</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
8.8 Resources

8.8.1 Library Resources

LIBRARY LEARNING RESOURCES PLAN FOR BACHELOR OF SCIENCE IN FORENSIC SCIENCE (BSc) HONOURS

FACULTY OF SCIENCE

Compiled by: Carol Mittlestead, B.A., M.L.S., Associate Librarian

Introduction:

The goal of the University of Ontario Institute of Technology’s Library is to provide quality library and information services to support the education and research programs of its Faculties. This definitely extends to include the Forensic Science specialty within the Faculty of Science.

The following document discusses the Library in relation to the collection; the accessibility of resources and services; and research support, staffing, and partnerships. The collection is defined as including both the traditional paper book or periodical, and the more nontraditional—but increasingly common—electronic index, book or journal database. Librarian recommended web sites are also a unique part of the collection in that they direct students and staff to valid academic sources. Accessibility addresses the physical presence of the Library, onsite reference assistance, the Library web page www.uoit.ca/library as a 24/7 portal, and interlibrary loan and document delivery. Research support, staffing, and partnerships emphasize the Library’s role in teaching students, liaising with faculty, and connecting with government and corporate agencies.

Collections:

It is understood that the Library’s acquisition plan must be based on evolving pedagogical needs as determined by the academic schools. In close liaison with the Deans and Professors, subject specialist Librarians will define collection development strategies for the ongoing curriculum-based purchase of resources as well as for the evaluation and review of existing material.

Books:

The Library offers a small but comprehensive collection. At present, there are approximately 65,000 volumes on the shelves. In mid-August, however, the Library took possession of its new building (described below) and this additional space will allow for the relatively quick expansion of the collection to over 160,000 texts. Currently there are approximately 7,000 volumes focusing on mathematics, biology, chemistry and physics. Since many programs at UOIT have a scientific and/or technological emphasis, continued investment in these subject areas is planned (e.g. 9,000 volumes by April 2005, 11,000 volumes by December 2005). The Library acknowledges that the Program’s defining factor in differentiating itself from its Ontario university competitors of Trent, Windsor, Toronto, and Laurentian, and in aligning itself with the standards set out by the American Academy of Forensic Sciences (AAFS) is the strong emphasis on science. Similarly, it is also realized that texts specifically addressing forensic analysis and evidence will be required, and examples of titles recently acquired include: Statistics and the Evaluation of Evidence for Forensic Scientists (Wiley), Advances in Forensic Applications of Mass

The Library has also been building its Criminal Justice collection in response to the needs of UOIT’s Faculty of Social Science. It has been noted that five courses will be delivered by this Faculty to Forensic Science students. Amongst the pertinent titles already on the shelf are: Introduction to Forensic Psychology (Sage), Profiling Violent Crimes: An Investigative Tool (Prentice Hall), Expert Evidence in Criminal Law: The Scientific Approach (Irwin Law), Criminal Investigation: Forming Reasonable Grounds (Thomson Nelson), Evidence: A Canadian Casebook (Emond Montgomery), and Hard Evidence: Case Studies in Forensic Anthropology (Prentice Hall). There will be continued investment in criminal and legal texts with both Faculties in mind. At present, this collection numbers approximately 5,500 volumes and will quickly climb to 7,500 volumes by April 2005. Further, faculty and students have access to a legal reference section containing statutes, regulations, and case law from series such as the Ontario Reports (O.R.), Canadian Criminal Cases (C.C.C), and Supreme Court Reports (S.C.R.).

Similarly with respect to the foundation course in psychology and the two compulsory electives—Management of the Enterprise and Collaborative Leadership—students should find themselves well equipped with resources. There are currently over 3,300 psychology texts on the shelves including those that specifically address mental illness. This section of the Library will grow to 4,500 volumes by early 2005 in response to the needs of this course as well as those posed by the Faculties of Social Science and Health Science. The Library presently has approximately 7,500 business books focusing on topics such as human resources, accounting, project management, marketing, operations management/supply chain management, corporate law, electronic commerce, and international relations. The intent is to increase this number by 20% or approximately to 9,000 volumes by September 2005 and to continue acquiring business volumes at the same rate for several successive years (e.g. September 2006 = 10,800 books).

Numbering over 13,000 (not included in the total above), e-books are an integral part of the UOIT library collection. Currently, NetLibrary, Ovid Books, Access Science, and The Encyclopedia of Materials Science and Technology are the databases most likely to interest to Forensic Science students.

Periodicals:

As of September 1, 2004, the Library provided access to over 1,400 science journals of which 720 specifically address mathematics, chemistry, and physics. There are also nearly 550 sociology periodicals. Journals are available as traditional paper subscriptions, single electronic titles (e.g. Science, Nature, Nature Reviews, and following program approval, The Journal of Forensic Sciences (American Academy of Forensic Sciences)) or as one of several titles within an electronic database. Amongst the relevant databases are: BioOne, Proquest Science Journals, Proquest Wilson Applied Science and Technology Abstracts, Proquest Nursing, Ovid, CCOHS (Canadian Centre for Occupational Health and Safety), and Ebsco Academic Search Premier. Those with a specific legal focus include: Lexis Nexis, Criminology Fulltext.
(Sage), Criminal Justice Abstracts and Proquest Criminal Justice Periodicals. An annotated list of databases is included at the end of this report.

It should also be noted that as a recent member of the OCUL (Ontario Council of University Libraries) and CRKN (Canadian Research Knowledge Network-formerly, CNSLP (Canadian National Site Licensing Project)) consortia, the number of journals available for access is increasing constantly and will continue to do so over the next academic year. The Library is already an active participant in the Ontario Scholars Portal (OSP or sometimes referred to as scholarsportal.info), an OCUL initiative that consolidates the electronic periodical holdings of several well-respected publishers (e.g. Kluwer, John Wiley, Cambridge University Press, American Psychological Association) to provide a single-access search gateway. For example, through Wiley, from 1996 to the present, students and faculty can search pertinent titles such as *American Journal of Human Biology, Journal of Raman Spectroscopy, Journal of Cellular Biochemistry,* and *International Journal of Osteoarchaeology.* Amongst the periodicals available through the Cambridge University Press platform from 1997 to the present are *Parasitology, Genetical Research,* and *Epidemiology and Infection.* Full access to the CRKN suite is anticipated by this October, and along with additional biology, chemistry, mathematics, and physics journals, faculty and students will be able to enjoy even more discipline related journals such as *Forensic Science International* and *Journal of Clinical Forensic Evidence* through the Elsevier component from 1995 onward.

Following the mandate of the University of Ontario Institute of Technology as a laptop university with “round the clock” accessibility to resources, whenever possible, the Library will purchase significant holdings in electronic format. It is, however, realized that paper copies may sometimes be essential. For example, the intent is to subscribe to *The Journal* published quarterly by the Canadian Society of Forensic Science.

Periodical coverage for the related areas of psychology, criminology, law, and management has been addressed through the Faculties of Social Science and Business and Information Technology. As noted above, the Library subscribes to a number of legal databases. Amongst the specific periodical titles worth reviewing are: *The Canadian Journal of Criminology, The Journal of Criminal Law and Criminology, Crime and Delinquency,* and *The Journal of Investigative Psychology and Offender Profiling.* A key psychological database is PsycArticles as published by the American Psychological Association, and those doing management topics should definitely examine articles contained within Ebscohost’s Business Source Premier.

**Internet:**

While the prevalence and importance of the Internet is recognized, it is also realized that not all information on the Internet is of equal value and/or prominence, and that not all people have equal search skills. The Library, therefore, strives to make staff and students aware of quality web sites appropriate to their program. This will be no different for the Forensic Science offering. Listings of recommended web sites are part of the Library Faculty Guides that are prepared with each UOIT program in mind. Posted on the Campus Library web site [www.uoit.ca/library](http://www.uoit.ca/library), these Faculty Guides are discussed in detail under “Accessibility”. For example, in addition to sites suggested for biology, chemistry, physics and mathematics, students and faculty will be linked to the Canadian Society of Forensic Science, the Centre of Forensic Sciences (Ontario Ministry of Community Safety and Correctional Services) and the Forensic Science Portal (maintained by Ben Joseph, Canadian Forensic Toxicologist).
Accessibility:

The Building:

A new state-of-the art, 55,000 square foot Library building was opened in August 2004. The intent of the design is to create a print/electronic library that accommodates new and emerging technologies without sacrificing the personal warmth of a traditional library. The building offers various types of study and activity spaces to accommodate different learning styles and user needs. These spaces include:

- Quiet public study spaces as well as a formal Reading Room, all within a “wireless” environment
- Collaborative learning spaces for groups of various sizes
- Common spaces and public service research workstations that facilitate intellectual interaction and engagement
- Electronic classrooms for regular ongoing educational sessions on library resources and research strategies
- Attractive and appealing display areas for art and library exhibitions
- Special needs adaptive technology equipment

Staff, students and faculty have welcomed this new building with its seating for over 500 patrons and 130 public access workstations with Internet access. The grand opening is scheduled for October 29, 2004.

On Campus Reference Assistance:

Reference services are provided by professional librarians for 68 hours of the 89 hours per week that the Library is physically open or 76.5% of the time. Librarians liaise with professors so classes that are specific to student research topics can be offered. The concepts of teaching and collaboration are further explained under the section entitled “Research Support, Staffing, and Partnerships”. Both staff and students are also welcome to make individual or small group appointments with Librarians.

Campus Library Web Page:

The Campus Library web page is available at www.uoit.ca/library and is accessible 24 hours a day, seven days a week. A Library e-mail address is provided as well as telephone information so individuals can leave messages at any time. In collaboration with other Ontario University Libraries, the Campus Library is also currently investigating a web-based service such as the Virtual Reference Desk (www.lssi.com) which uses chat software to deliver reference service to users regardless of time and location. The Librarian can “push” pages to patrons so they can literally see both the steps involved and the results achieved with a given search. Consequently, this technology promises to be more effective than e-mail and telephone. Beginning with limited hours and an after-hours e-mail default, the ultimate goal is to make virtual reference a “round the clock” service.

General reference assistance is provided through Campus Library web page sections that explain topics such as computer search techniques, article searching, Internet
evaluation, and bibliographic citation. Amongst the services outlined are circulation procedures, reserves, and interlibrary loan. What makes the UOIT Library web page truly unique is its Faculty Guides. Prepared with each program in mind for a particular Faculty, every Guide outlines and links to pertinent Electronic Databases and Indexes; provides sample listings with links to relevant journals along with subject headings for further investigation; highlights the Catalogue with suggestions from the Reference collection; describes and links to the most appropriate E-book databases; and offers Recommended Web Sites. As discussed above, collection material for the Forensic Science program is already being consolidated and the construction of this specialized UOIT Library web page section within the Faculty of Science is well underway. These Guides are indeed resource portals.

**Interlibrary Loan and Document Delivery:**

Interlibrary Loan is available free of charge to students and faculty. Individuals have the option of making their requests online or in person. RACER (rapid access to collections by electronic requesting) is a VDX (Virtual Document Exchange) interlibrary loan system currently being implemented in OCUL member libraries. Students and faculty can search the catalogues of all Ontario university libraries and place immediate online requests for any available item. The system populates the request automatically with the bibliographic information from the record chosen, and a patron name, i.d. number, and e-mail address are all that need to be added to the online form. As part of OCUL and the IUTS (Inter University Transit System), the Campus Library now receives loans in a very reasonable amount of time, but RACER will significantly lessen the wait.

Faculty and students from UOIT may also visit any of Ontario’s university libraries and usually, may borrow books directly from them upon presentation of their UOIT photo identification card; the University of Toronto is an exception in that undergraduates from other institutions do not have borrowing privileges. Materials may be returned directly to the lending library or may be left at the Campus Library where they will be returned to the appropriate lending library. Interlibrary Loans and document delivery are also available from other lending institutions (e.g. CISTI or libraries outside the province of Ontario) as required.

**Research Support, Staffing, and Partnerships:**

UOIT librarians will play a critical role in facilitating knowledge acquisition and teaching Forensic Science students how to access information in an efficient way as well as how to critically evaluate resources and utilize them in constructing experiments, formulating research papers, and writing technical reports. The following strategies are either in place or planned:

1. A professionally qualified librarian (M.L.S.) with subject expertise in the sciences and health sciences joined the UOIT Library staff in August 2002. Staffing support for various academic areas within the Library will continue to expand as UOIT enrollment increases, and student and faculty needs are reassessed after the initial year of classes.
2. Customized curriculum for instruction in the use of library resources and technology pertinent to the Program is being designed and will continue to be reformulated as faculty and student needs are recognized. As professors arrive on the UOIT campus, librarians are meeting with them to identify their teaching and research objectives. This will progress to ensure that classes are targeted to the specific learning outcomes of a given paper.

3. An ongoing objective is to facilitate strong library and faculty collaboration to guarantee the relevance of collections to the curriculum.

4. The importance of liaising with the UOIT Centre for Academic Excellence and Innovation (CAEI), a facility where faculty are introduced to and mentored in the use of instructional technology such as computerized teaching packages, presentation software, web development, and distance learning delivery is recognized. This would ensure that the Library’s resources, in digital format, are included amongst the links for courses developed within the Faculty of Engineering and Applied Science. A link to the Library Web Page Faculty Guides from each student’s “My WebCT” template is planned.

5. The Library will connect to national and global resources that both enhance student employment opportunities and that support high levels of applied research by scholars in the Faculty.

The Campus Library welcomes the introduction of the Forensic Science program. Support will be provided in terms of the collection, accessibility, staffing, and partnerships.
<table>
<thead>
<tr>
<th>Forensic Science</th>
<th># of Holdings (print) relevant to the field of study</th>
<th># of Holdings (electronic) (include program specific databases)</th>
</tr>
</thead>
</table>
| On-Site Library Resources Relevant to Degree Program Area (For Students/Faculty) | **Science**  
7,000 – September 2004  
9,000 – April 2005  
11,000 – December 2005 | 16 databases for scientific articles  
6 supporting criminal/legal journal databases  
4 e-book databases (see attached descriptions) |
| **Criminology/Legal** | 5,500 – September 2004  
7,000 – April 2005  
9,000 – December 2005 | |
| Other Library Access (e.g., web-based, inter-library arrangements) | OCUL Interlibrary Loan arrangements (Racer, VDX, IUTS) | |

Provide a summary of the currency of the holdings at each location specified. Include a list of the program specific databases.

New material is added and older resources are removed from the shelves on an ongoing basis. Texts that are practical explaining current applications (e.g. in mathematics, physics, chemistry or biology) should be no more than 7 years old. Materials such as reports, commission findings and recommendations, and historical overviews have varying shelf lives. Dates for the periodical collection vary. This is true in both paper and electronic format. Some magazine and journal titles may be available in full text for the past 30 years plus the current time, while others may be held for three years or less. Longevity (e.g. research findings) rather than currency (e.g. product releases and updates) and perceived academic value are amongst the deciding factors. Interlibrary loan and document delivery is very important in that for many titles included within databases, only indexing and/or abstracting is provided regardless of date.
Forensic Science Electronic Databases


AIP (American Institute of Physics) – Collection of key academic journals in physics

BioOne - Aggregation of high-impact bioscience research journals in full text

Cambridge University Press – Fulltext noteworthy academic collection of journals addressing sociology, psychology, education, history, politics and the sciences

CCOHS (Canadian Centre for Occupational Health and Safety) – Collection of databases focusing on chemicals highlighting their properties, uses, hazards, and availability – excellent toxicology reference

CISTI (Canada Institute for Scientific and Technical Information) Source – Electronic database of the table of contents of over 17,516 journals primarily in science, technology and engineering (65%) – Some business and economics (11%)

EBSCOhost Academic Search Premier – Excellent comprehensive journal collection covering the social sciences, humanities, general science and technology, nursing, multi-cultural studies and education

EBSCOhost INSPEC – IEE (Institution of Electrical Engineers) indexing and abstracting database to scientific and technical literature worldwide

Elsevier (Science Direct) - Comprehensive full text collection of well-respected science and technology journals

Encyclopedia of Materials Sciences & Technology – E-book for chemistry, physics, manufacturing, and engineering

IEEE Xplore – Fulltext of IEEE (Institute of Electrical and Electronics Engineers) journals, magazines, conference proceedings, and standards

ISI Web of Science – Comprised of three indexes – Humanities, Social Sciences and Science

Kluwer Online – Comprehensive collection of full text journals – Numerous biology, chemistry, information technology and health-related titles

NetLibrary – Collection of over 5,000 e-books

Ovid – Nursing journals and abstracts, evidence-based case studies and reviews, Medline, CINAHL (Cumulative Index to Nursing and Allied Health Literature)

Ovid Books - E-books for pathology, physiology, epidemiology etc.

Proquest Nursing – Nursing and allied health journals
Proquest Science Journals - Journals emphasizing computers, chemistry, physics, telecommunications, engineering and transportation

Proquest Wilson Applied Science and Technology Abstracts – Indexing and abstracting with some full text for journals addressing technical issues

Wiley Interscience – Impressive database of full text journals – Excellent coverage of business, the sciences, and technology

Supporting Criminology/Legal: Criminal Justice Abstracts, Criminology Full Text Collection (Sage), Lexis Nexis, Proquest Criminal Justice Periodicals, Social Services Abstracts, Sociological Abstracts,

CM
September 21, 2004
8.8.2 Computer Access

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Students (Cumulative)</th>
<th>Number of Computers Available to Students in Proposed Program</th>
<th>Number of Computers (with Internet Access) Available to Students in Proposed Program</th>
<th>Location of Computers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On Site</td>
</tr>
<tr>
<td>2004</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>96</td>
<td>96</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>192</td>
<td>192</td>
<td>192</td>
<td></td>
</tr>
</tbody>
</table>

- 240 additional computers with internet access are available in the Learning Commons and Library.

Instrumental to the success of the students in UOIT’s degree programs are personal laptops. As part of his/her program, each student will be required to lease a standard laptop computer. This will include resources that match the needs of the specific University programs. Each laptop will be leased on a two-year refresh cycle, with each student receiving a new or one-year-old laptop. This will ensure adequate capacity and technical currency in an ever-changing technological marketplace.

Students will have the benefit of wireless internet access. This provides them with opportunities for collaborative learning, electronic communities, instant communication and a closer relationship between themselves and their faculty and peers. All students will have equal opportunities to make quality presentations, do research, communicate with faculty and access course materials, while not having to wait for available on-campus computers.
8.8.3 Classroom Space

Naturally, classes for students will be scheduled in rooms which are an appropriate size to accommodate the learning activity. Smaller lecture rooms and break-out rooms for tutorials and small group activities will be available as needed.

Classes and tutorials in all subjects require the use of computers and so all classrooms used by students will have wireless connectivity or will be wired for computer use and internet access.

Additional physical requirements include: data projectors in all classrooms, blinds on windows to reduce sun glare, comfortable and ergonomically sound chairs and tables for computing, white board with markers/eraser, and bulletin board display space in classrooms.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Students (Cumulative)</th>
<th>Number of Classrooms</th>
<th>Location of Classrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Campus</td>
</tr>
<tr>
<td>2004</td>
<td>48</td>
<td>54</td>
<td>✓</td>
</tr>
<tr>
<td>2005</td>
<td>96</td>
<td>84</td>
<td>✓</td>
</tr>
<tr>
<td>2006</td>
<td>144</td>
<td>84</td>
<td>✓</td>
</tr>
<tr>
<td>2007</td>
<td>192</td>
<td>102</td>
<td>✓</td>
</tr>
</tbody>
</table>
8.8.4 Laboratories/Equipment

The Forensic Science Program will have one dedicated wet lab, and 1 dedicated dry lab (the Crime Scene House). Specialized equipment will be purchased for the program. The program will also make use of UOIT’s existing Biology, Chemistry and Physics laboratories and equipment.

Dedicated computer laboratories are not needed since all students will have personal laptops and all classrooms at UOIT will have wireless connectivity or be wired for computer use and internet access.

Professors will typically specify laboratory requirements and resources, including hardware and software, one year in advance of when they will be needed.
8.8.5 Resource Renewal and Upgrading

- For library renewal and upgrading, refer back to section 8.8.1: Library Resources

- Computers and Computer Access:

Each student will lease as part of his/her program, a standard laptop as required for individual University programs. Each laptop will be leased on a two-year refresh cycle. Each student will have a new or one-year-old laptop. This will ensure adequate capacity and technical currency in an ever-changing technological marketplace.

- Classrooms and Physical Facilities:

The University of Ontario Institute of Technology is located on the land bounded by Conlin Road, Simcoe Street, the existing subdivision on the southeast boundary and the valley lands of the Oshawa Creek to the west. This totals 115 acres. The Board of Governors of Durham College has also purchased and acquired 350 acres to the north of this area to accommodate future development.

The first University building, which was ready for occupancy in September 2003, contains classrooms, laboratories, and academic and staff offices. A 300-bed residence was also ready for the first class of UOIT students in September 2003.

The second phase of construction includes two additional academic buildings comprised of classrooms, laboratories, academic and staff offices and a new library to be shared by UOIT and Durham College. This phase was ready for occupancy September 2004.

The initial core facilities for teaching and research at the UOIT are housed in the three academic buildings. Together with the new University library, these buildings overlook the landscaped campus commons. This precinct is the heart of the University and will be its central crossroads.

A key characteristic of each academic building is the provision of generous student study and lounge space. These are complemented by a faculty lounge, Council room and student club offices. The lounge and study spaces are concentrated around a central skylit atrium which provides a point of orientation, gathering and connection for students and faculty. The buildings are designed to be highly flexible, adaptable to programs and teaching configurations as yet unknown. Wired and wireless connection is provided through all dedicated and informal teaching spaces.

The new University library is designed as the intellectual and social commons for this 21st century university. In particular, the library has two points of focus; the provision of access to electronic collections and resources and work and study space for 750 students. While the library will house a print collection of about 125,000 volume equivalents, with an emphasis on reference materials, it is in the provision of access through wired and wireless connection to electronic collections that the library will be distinguished.

The building is designed on three floors with the connectivity and staff resources to fulfill this mission. Much attention has been devoted to the quality and variety of student space. Large study halls overlook the landscape commons and provide a variety of table, carrel and soft lounge seating. Many enclosed rooms are also provided for group study, seminar discussion and quiet work activities.
Laboratories/Equipment:

A Teaching Equipment Fund will be established to provide funds for laboratory and equipment purchase and renewal. In addition, funds will be sought from donations to upgrade laboratories and equipment.
8.9 Support Services

UOIT is committed to ensuring all students experience a "rich" atmosphere of academic and latent education by building upon the high quality of student life, including advising, counseling and support services for personal, academic and career goals. Qualified, highly skilled and student-focused staff will work directly with individual students and in partnership with faculty and other staff as appropriate, contributing to student success.

The following outlines the types of student services available at UOIT.

<table>
<thead>
<tr>
<th>Support Service</th>
<th>Brief Description of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Advising</td>
<td>Academic advisors will be available to assist students in learning study skills, including listening and note-taking, personal and time management and exam and test preparation.</td>
</tr>
<tr>
<td>Career &amp; Employment Services</td>
<td>A comprehensive career and employment counselling service will be available to both students and graduates. Counsellors will deliver workshops and individual assistance in the following areas: job search techniques, resume and cover letter writing, and interviewing skills. Special outreach programs that include resume clinics and mock interviews will be offered throughout the school term. Expert labour market information will be presented by employer panels that will share information about their specific businesses and industries. Sixteen-month internship opportunities will provide practical work experience outside of the program of studies to increase the graduates marketability. Successful graduate employment will be supported by an annual Job Fair in addition to an online job posting service.</td>
</tr>
<tr>
<td>Personal Counselling</td>
<td>The Financial Aid Office will help students prepare budgets for the school year and to deal with financial crisis during the year. This process will encourage students to consider their income and expenses and enable a counsellor to identify potential problems, review them and offer some solutions. Through budget counselling, students can learn the skills to keep their finances in good order.</td>
</tr>
<tr>
<td><strong>Support Service</strong></td>
<td><strong>Brief Description of Service</strong></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Student Awards</td>
<td>Scholarships will be awarded automatically for outstanding academic achievement to eligible students upon completion of at least one year of full-time study. UOIT will offer athletic scholarships.</td>
</tr>
<tr>
<td></td>
<td>Bursaries: A comprehensive bursary program will be available to students in financial need. Entrance bursaries will be offered to applicants that are unable to finance a university education. Three times a year a formal bursary program will be available to current students. Throughout the year, individual bursaries are offered to students who are challenged by high cost programs, supplies or equipment. Emergency bursaries will be available to students facing unanticipated financial problems.</td>
</tr>
<tr>
<td></td>
<td>On campus employment will allow students to support themselves while they are attending UOIT.</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>The Ontario Student Assistance Program (OSAP) provides financial assistance to help students finance their education. By completing an OSAP application, students will be assessed for loan assistance from both the federal and provincial governments.</td>
</tr>
<tr>
<td>Services for Students with Disabilities</td>
<td>The Centre for Students with Disabilities (REACH) will assist students with disabilities who require accommodations to be made in order to be successful at UOIT.</td>
</tr>
<tr>
<td></td>
<td>Students will be encouraged to contact the REACH office if they plan to attend UOIT, so that supports can be put in place. Supports may include adaptive testing arrangements, FM hearing systems, peer tutors, access to computers and adaptive software, visual aids, counselling and much more.</td>
</tr>
<tr>
<td>Intramural Athletic Academic Success Program</td>
<td>The Intercollegiate Athletic Academic Success Program will encourage academic success for all intramural athletes through the establishment of academic standards and a comprehensive program of success strategies and advising.</td>
</tr>
<tr>
<td>Alumni Services</td>
<td>UOIT will establish an Alumni Services Department which will allow former students to continue to contribute to academic and student life at UOIT through participation in events and fundraising initiatives.</td>
</tr>
<tr>
<td>Support Service</td>
<td>Brief Description of Service</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Athletics – Varsity/Intramural</td>
<td>UOIT has five squash courts, double gymnasium, fitness area with indoor track, two outdoor tennis courts, basketball court, softball diamonds, football and soccer field and three beach volleyball courts.</td>
</tr>
<tr>
<td>Chaplain Services</td>
<td>The chaplain's general role will be to promote the general well being of the University: by means of her/his presence and concern; through worship and other liturgical activities and in pastoral and non-credit educational programs. The chaplain's specific role is to provide pastoral care for individuals in need. This care is extended in complete confidence, without prejudice, and apart from the reporting systems of the University administration.</td>
</tr>
<tr>
<td>Health Services</td>
<td>A Registered Nurse is available 5 days/week to provide First Aid, nursing care, advise and referrals. Lab services and Birth Control are available on site. A Flu Immunization program is free to all students and staff. Health and Lifestyle promotional services are available through group presentations, guest speakers and one-to-one appointments. A Mental Health nurse offers personal counselling on family, relationship or anger issues. Referrals are given through our Student Assistance program to medical specialists outside of the University. Six free one-hour sessions are available. Each week a Drug and Alcohol counselling service is on campus. The cost can be covered through OHIP or on a fee for service basis. A Physician will be on campus each week.</td>
</tr>
<tr>
<td>Peer Services/Peer Tutoring</td>
<td>Peer tutoring will be available to students experiencing difficulties with individual subjects. Students who have successfully completed the subject will take on peer-tutoring roles.</td>
</tr>
<tr>
<td>Residences</td>
<td>Students at UOIT will have access to a 650 bed residence suite with private bedrooms a kitchen and a bathroom.</td>
</tr>
<tr>
<td>Student Government</td>
<td>A student government office will be established to enhance the educational experience and quality of life for all undergraduates at UOIT.</td>
</tr>
<tr>
<td>Career Shop</td>
<td>Through the Career Shop, UOIT students will have fast and easy access to a full range of career and educational programs, training, services and resources. The Career Shop is also an excellent source of information about programs and training available in the local community and throughout the province.</td>
</tr>
</tbody>
</table>
9.0 CREDENTIAL RECOGNITION STANDARD

9.1 Program Design and Credential Recognition

The proposed program largely conforms to the draft undergraduate curriculum recommendations of the Pilot-2003 Accreditation Standards document, prepared by the Forensic Science Education Programs Accreditation Commission of the American Academy of Forensic Sciences (AAFS). Further information about these standards can be found on the AAFS website - www.aafs.org.

Dr. Lee Chatfield, Head of the Department of Forensic and Investigative Science and Dr. Allison Jones, Program Coordinator and Senior Lecturer, Forensic Science, University of Central Lancashire, confirmed that the design of the program and its specialized courses would enable students, with appropriate grades, to apply to UCL’s graduate program in Forensic Science.

In addition, the program was designed so that students selecting an appropriate mix of biology subjects as their science electives would be eligible to apply to graduate programs in Biological Science at other Canadian universities.

9.2 Consultation

In the UK, forensics-related programs have grown exponentially over the past four years; there are currently over 400 university programs in the UK with “forensics” in the title. W.R. Smith, Dean of Science, conducted a site visit to the Department of Forensic and Investigative Science at the University of Central Lancashire, Preston, England, in March 2003 and again from March 8-12, 2004, and gathered extensive information concerning their very successful programs in Forensic Science. This Department offers several such programs, including a BSc Honours in Forensic Science and combined honours programs involving forensic science in combination with criminology, biochemistry or law. The proposed UOIT program was designed with the assistance of faculty of this Department. They have offered their ongoing support and potential collaboration, including faculty and student exchanges, when the proposed UOIT program is initiated. These faculty members are identified in Section 8.5.3 and their curricula vitae are provided in Section 15 of this proposal.

In October 2004, Dr. Lee Chatfield and his associate, Dr. Allison Jones visited UOIT to assist in the final steps of the proposal development. During their visit, they worked with UOIT’s Faculty of Science to finalize the program map and course outlines, incorporating the feedback received from the Center of Forensic Sciences in Toronto. The proposal was reviewed to ensure that its design, content and standards appropriately prepared program graduates for graduate study in biology. In addition, these consultants were asked to evaluate UOIT’s laboratory facilities with regard to the proposed program and to assist with the development of a tentative equipment list. Their findings and recommendations will be available for the quality assessors’ review at the site visit.
Additional Consultations

On April 15, 2004, Margaret Henry of the Centre of Forensic Sciences, Toronto, was invited to Durham College/UOIT to give a presentation on Forensic Biology. Dr. Wm. Smith, the Dean of the Faculty of Science, met with Ms. Henry afterwards to discuss the proposed Forensic Science Program. He later sent her a draft of the proposal, which she circulated to her colleagues for their feedback. A summary of that feedback is provided in the copy of Ms. Henry's email to the Dean. These recommendations provided by the CFS team were incorporated into the development of the program's course outlines.

-----Original Message-----
From: Henry, Margaret (JUS) [mailto:Margaret.Henry@jus.gov.on.ca]
Sent: Fri 4/16/2004 13:44
To: William Smith
Cc: 
Subject: CFS Contact Information

As discussed yesterday, here is the contact information for our training manager, Gareth Jones.

   Gareth Jones
   Training Manager, CFS
   (416) 314-3110
   gareth.p.jones@jus.gov.on.ca

He should be able to provide you with any additional assistance you may require.

I took the liberty of sharing your proposed program outline with a few colleagues and inviting their comments. I have included a compilation of them below. Several of them seemed very interested in any future opportunities that may be available to them through sitting on an advisory board to lecturing.

There should be a course that covers Cdn law- basic court set-up, expert evidence and important rulings related to expert evidence. This should include time spent with a lawyer and in the courthouses. Use of mock (moot) courts in this class and along with the crime scene course. Maybe work with a university with a law degree to get practice being examined and for the lawyers to get a "crude" chance to use science in their evidence.

A second (advanced) genetics course

In Forensic Biology I, incorporate the limitations of the tests, why some are no longer in use and the significance of the results.

In the Forensic Biology II, statistics and population genetics should also be included in the DNA profiling and genetic analysis portion to incorporate the significance of the results.

Increase presentations, open forum discussions (facilitated) so that individuals have more experience talking in front of a group (will help throughout any choice of careers).

Use of CFS staff, the Durham police agency (FIS) and lawyers to provide in class lectures etc. to make the training a practical one.
Ensure that the students get to actually use (hands on) the equipment and instrumentation used in the various disciplines so that it's not only theoretical. My colleagues felt very strongly about this.

A current literature review should be a component of some of the applicable courses to give students the experience of performing literature searches and to critically evaluate the science.

Additional comment provided from a graduate of the forensic M.Sc. program at Strathclyde:

At Strathclyde University (Glasgow Scotland), there was both an undergrad and post-grad degree. In the post-grad degree it was limited to forensic biology and chemistry/tox. At the end of the first semester there was a crime scene portion, where students collected their own evidence from scenes. Analysis of the evidence was completed and the results and significance were provided in a report. This report was sent to the law department within the university and some students were selected to be crown and defence. A trial was arranged and a judge from the high court (friend of the course director) would sit through all these hearings and assess the evidence and the experts and lawyers; both the judge and the supervising teacher would complete an assessment of the expert. Students would be the "jury" although they never got to convict or acquit anyone. This was completed at night so that we could use a courtroom in the courthouse in Glasgow.

Additional comment provided from a graduate of the U of T B.Sc. program:

The UOIT proposed program is much more broadly based and comprehensive.

Best of luck in getting this course off the ground. Overall, the comments were very positive. It almost makes me want to head back to school for another degree! Please don't hesitate to contact me if I could be of further assistance.

Regards,
Margaret

Margaret Henry, M.Sc.
Forensic Scientist, Biology Section
Centre of Forensic Sciences
25 Grosvenor St.
Toronto, ON M7A 2G8
Tel: (416) 314-3270
Fax: (416) 314-3258
email: margaret.henry@jus.gov.on.ca
From: Henry, Margaret (JUS) [mailto:Margaret.Henry@jus.gov.on.ca]
Sent: Wednesday, August 25, 2004 12:28 PM
To: William Smith
Subject: CFS Visit

I'm glad you were able to meet with Gareth. I hope you found it worth the trip to TO. I know that several of my colleagues were quite impressed with your proposed Forensic Science program and would like to be involved with it if there were any such opportunities.

Best of luck with it! I look forward to someday working alongside some of its graduates.

Regards,
Margaret

On Aug. 23, 2004, the Dean visited the Centre of Forensic Sciences in Toronto to present information about the proposed program to Gareth Jones (Section Head, Organizational Development Section) and Stephanie Reilander (Research Director). The Dean forwarded a copy of the draft proposal to Mr. Jones, who then distributed it to other Section Heads at CFS for their feedback. A summary of their comments is provided in the email below. Mr. Jones also provided the Dean with a letter of introduction to appropriate personnel at the Ontario Police College.

-----Original Message-----
From: Jones, Gareth P. (JUS) [mailto:Gareth.P.Jones@jus.gov.on.ca]
Sent: Thursday, September 30, 2004 5:30 PM
To: William Smith
Cc: Prime, Ray (JUS); Reilander, Stephanie (JUS)
Subject: New Forensic Science program review by CFS Section Heads...

Hi William,

As requested and promised, I am providing some of the comments I've received from the Centre's Section Heads re: your program proposal/schedule.

1. Chemistry:
   a. Concern re: not enough chemistry courses included to provide a strong enough background to understand the full range of work of a forensic chemist, nor to continue on to do graduate studies in Chemistry. Additional courses that would enhance the program's chemistry content would include:
      i. Intro and Advanced Inorganic Chemistry
      ii. Advanced Instrumental Analysis
      iii. Materials Science
      iv. Polymer Chemistry
      v. Laboratory experience in microscopy (not sure if this is covered in some of the labs?)
   b. The requirement for 5 of the electives to be liberal studies courses restricts the ability to focus the program on a particular area of science. Please refer to the AAFS Forensic Science Education Programs Accreditation Commission (FEPAC) accreditation standards - see links:

c. One suggestion is to evaluate the relevance or significance of 'tyre and footwear' impressions in forensic chemistry as part of the Introductory Forensic Science course. Also, it is not clear what the distinction is, in that course, between 'Forensic Chemistry' and 'specific aspects of forensic chemistry'.

2. Biology:
   a. Some of the course material is UK centric e.g. Crime scene science.
      FSCI 2010U mentions PACE a UK statute, Forensic Anthropology FSCI13030U talks about Stonehenge etc., etc. perhaps it would be better to have more Canadian content e.g. Aboriginal and Norsemen sites etc.
   b. Some of the courses appear to be "filler" courses with a lot of repetition i.e. Introductory Forensic Science, Criminalistics, Forensic Practice. In some of these courses I would like to see the principles of Hypothesis-Based-Testing as applied to forensic science, framework of circumstances and the hierarchy of propositions.
   c. Strongly recommend that some sort of course work covers quality assurance in a formal manner.
   d. Recommend that the Law for Forensics Investigators FSCI4050U have a heavy Canadian content, i.e., the Criminal code and relevant case law (DNA Identification Act, Mohan, Terceira, SAB etc., etc.).
   e. Although there is a strong, science content in the program, the minimum requirements for a DNA scientist could be covered in more detail, i.e., Genetics and Molecular Biology only appear to be a 1/2 course and there is very little coverage of population genetics.
   f. I have attached the SWGDAM training guidelines that may assist in this review.

3. Toxicology:
   a. Clearly there is not much to review regarding Forensic Toxicology since the program doesn't include a course in it. I don't know what their reasoning is but I will make an assumption and offer comments base on the assumption.
   b. Assuming that the program organizers are aware that Toxicology is a major part of most forensic laboratories and that they have chosen to exclude it from their program based on a lack of resources I suggest that:
      i. An introduction to Forensic Toxicology at least be included in the introductory course.
      ii. Some analyses that would be conducted in a Tox Lab be included in their analytical chemistry course (extraction of drugs from a biological matrix and analysis by GC/MS, HPLC etc., etc.).
   c. Strongly suggest that consideration be given to the fact that Toxicology is a much more significant component of forensic science than Anthropology or Psychiatry and that serious review should be made to working it (Toxicology) into the program as soon as possible. If they choose to do so, a pharmacology course should be added in 2nd or 3rd year prior to the forensic toxicology course and a laboratory component would be valuable so that students understand the basics behind extracting some of the various classes of drugs from biological samples and the various methods available for analysis.

4. Forensic Document Examination/Physical Comparisons:
   a. There is nothing to review with respect to the areas of Forensic Document Examination or Physical Comparisons - areas of forensic science pertinent to the Centre's Documents/Photoanalysis Section.

5. Firearms Examinations:
   a. This is nothing to review with respect to the area of firearm forensic examinations.

6. Electronics Examinations:
   a. This is nothing to directly review with respect to the area of
forensic, digital evidence examinations. I am providing the link to the AAFS SWEDE for suggestions: http://ncfs.org/swgde/index.html.

b. If you recall, we have talked earlier about computer science, programming, electrical engineering, etc., etc.

I hope this is of assistance.

In general there was the opinion that the material is of high quality and that the program appears to have focused first on the hard science, with the forensic element being more of a vehicle for additional learning as opposed to the program’s soul purpose.

Cheers,

Gareth Jones, M.Sc.
Section Head
Organisational Development Section
Centre of Forensic Sciences
15th Floor
Tel: 416-314-3110

The Dean consulted with Gary Pitcher, the Director of the Rights and Responsibilities Office at Durham College/UOIT and a former member of the Toronto Police Services, who introduced him to contacts at Durham Region Police Services and the Toronto Police Services.

Mr. Pitcher put the Dean in contact with Mr. Herb Curwain, currently with the Durham Region Police Services and a member of the advisory board for Forensic Investigation Training. Mr. Curwain agreed to distribute information about UOIT’s proposed program at the Golden Horseshoe Forensic Investigators meeting in mid-September.

The Dean received the following email from Mr. Curwain following the Golden Horseshoe Forensics Investigators meeting. It details feedback provided by his colleagues about UOIT’s proposed Forensic Program.
-----Original Message-----
From: Herb CURWAIN [mailto:HCURWAIN@drps.ca]
Sent: Tuesday, September 14, 2004 4:52 PM
To: Gary Pitcher
Cc: William Smith
Subject: RE: Forensic Science Program

Gentlemen

I have just returned from the meeting and have spoken at length to several members. Gareth Jones, head of Biology Section advised that he spoke to you Dr Smith and provided some recommendations. He had not reviewed the new course content that I had and advised that he was impressed with the new line-up. He advised that he and his colleagues believed that a successful student in this program will leave with a very good solid background in sciences. Would make good candidates for their work.

He reiterated the need for stat type courses which you have. I brought up the matter of employment of such people with the police services and recieved mixed reactions. There is a strong old school mentality in this area that I don't have enough space to get into on the e-mail but would be glad to speak about it further when we meet. I believe there is a potential need for police to look at utilizing civilians more in CSI fields. There are those that don't yet it is increasing outside of Canada and even the detractors had to admit today that they themselves are starting to employ civilians in positions that once were police only.

As for advisory persons they recommended someone from the CFS, a police forensic person. I would suggest Gareth Jones or Steve Lintop who is heading up the new CFS research and development unit. Individuals in both of these areas felt would add a potential buy in by police and forensic scientists.

All in all the program was well recieved and the consensus was very positive. I have forwarded a copy to several other associates to review and they have yet to get back to me. I will advise when they do.

Waiting to hear back from you.

Herb
On UOIT's behalf, Mr. Pitcher also forwarded a copy of the Forensic Science Proposal to E. Stewart, the Director, FIS of the Toronto Police Service.

Mr. Stewart's response, including input from one of his colleagues, is included below:

From: Edward.Stewart@torontopolice.on.ca
[mailto:Edward.Stewart@torontopolice.on.ca]
Sent: Wednesday, October 06, 2004 2:28 PM
To: Gary Pitcher
Subject: Gary Pitcher Durham College Outline of response to his email

Gary;
Please find attached a brief report from Dave Wieland concerning your request. I have discussed the issues with Dave and agree it would be a great benefit to Police Services to have a University as yours offering such an important forensic program. You have my support and if you wish to speak to me further or to Dave please do not hesitate to call. I can be reached at 416.808.6877 and Dave can be reached at 416.8-8.6884. Regards, Ed Stewart Staff Insp. Director,FIS.

----- Forwarded by Ed Stewart/1227/UNIFORM/TPS on 2004.10.06 14:18 --
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David Wieland

To:       Ed Stewart/1227/UNIFORM/TPS@TPS
2004.10.06 08:00

I have read over the proposal and I think this would be a forensic program we could support. With your approval, Rick and I can meet with Gary Pitcher and go over the program with him and provide any guidance or assistance he requires.

This type of program would help in several areas:

1/ To provide an educational program for people looking for a career in forensics and crime scene analysis that would build a broad base of young people who would already have an understanding of and training for being a crime scene examiner.

2/ It would provide an avenue for any serving police members who were considering a move into the forensic unit of their service to receive the insight and understanding of the type of work we do here.

3/ Serving members of any service would also be in a position to take the entire program and further their educational training in order to enhance their chances for promotion within their own department.

4/ Members of forensic units could also attend this type of program to enhance their own educational standards within the forensic community.

In general this type of program would be beneficial for everyone both within the department and for the general public. I think we can support this type of program that would serve to reach a wider segment of society and educate them on all aspects of the Forensic Sciences in relation to the work we do.
There are some programs out there but we have never been asked to participate in the process of setting them up and I think this would be an invaluable experience for all concerned.

David Wieland
SOCO Co-ordinator
F.I.S.

In early October 2004, Dr. Smith met with Mr. Rick Devine, Team Leader of the College's Forensic Identification Training Unit and his colleague, R. Morris, at the Ontario Police College in Springfield ON to present the details of the proposed program and to solicit their feedback. They indicated that they viewed the Forensic Science Program as a 'potentially exciting program.' They emphasized that a crucial factor for the program's success was the recruitment and hiring of well-qualified and experienced faculty members. Mr. Devine expressed his willingness to consider supervision of students in the fourth-year Research Project course. He felt that other police agencies in Ontario would likely have a similar interest in supporting the program in this way.

Additional meetings are planned with Mr. Wieland and Mr. Devine.

As mentioned previously in this submission, the Faculty of Science intends to form an Advisory Committee comprised of representatives from relevant provincial and local organizations and police services, including those included in the correspondence provided in this section, to provide ongoing advice to ensure that the program remains current and responsive to the needs of stakeholders.
10.0 REGULATION AND ACCREDITATION STANDARD

There are no professional regulatory bodies that govern the development and implementation of a program of this nature.
14.0 MINISTERIAL POLICY DIRECTIONS

14.4 Applicant Acknowledgement and Agreement Form

Applicant Acknowledgement and Agreement

(To accompany every application for ministerial consent under the Post-secondary Education Choice and Excellence Act, 2000)

This form must be completed by a representative of the applicant who is authorized to bind the applicant, and must be included with the materials accompanying an application to the Minister for a consent under the Post-secondary Education Choice and Excellence Act, 2000.

Name of applicant: University of Ontario Institute of Technology

Purpose of application: Bachelor of Science (Honours) in Forensic Science

☐ Please indicate if this application relates to use of the term university.

1. The applicant hereby acknowledges that, in making this application, it understands that:

1.1 The granting of a consent by the Minister of Training, Colleges and Universities under the act is a privilege, not a right.

1.2 A consent by the Minister of Training, Colleges and Universities under the act is normally granted for a specified period of time and remains in force only during that specified period.

1.3 A Minister's consent does not include any express or implied entitlement to:
   • a renewal of such consent; or
   • a consent for additional or different activities regulated by the act.

1.4 A Minister’s consent does not entitle the consent holder to any funding from the Government of Ontario, including but not limited to operating, capital, or research funding.

1.5 A private organization from outside Ontario will be treated no less favourably, in like circumstances, than a private organization from Ontario.

1.6 A private organization, whether from Ontario or from outside the province, is not entitled to treatment that is no less favourable, in like circumstances, than the treatment accorded by the Minister to a public institution.

1.7 A Minister's consent is not transferable, directly or indirectly, to a third party.

1.8 If the applicant fails to comply with any legislative requirements or with the terms and conditions of the consent, the Minister may amend or change the terms and conditions of the consent or suspend or revoke the consent.

1.9 A Minister's consent does not make the consent holder's students eligible to apply for government financial assistance, grants, or awards that are provided directly to students (e.g., assistance under the Ontario Student Assistance Program). Approval of organizations and programs for the purposes of Ontario student loans is established pursuant to the Ministry of Training, Colleges and Universities Act and regulations thereunder, as amended from time to time.

1.10 The Minister's criteria and policy statements related to the review of applications for a ministerial consent may change from time to time.

1.11 All information provided to the Minister or the Post-secondary Education Quality Assessment Board in applications and related documentation may be subject to disclosure under the Freedom of Information and Protection of Privacy Act.

(continued)
1.12 No consent shall take effect until the applicant provides confirmation, in a written form approved by the Minister, that the applicant understands and agrees to comply with all of the terms and conditions attached to the consent.

1.13 Should the Minister grant a consent, the consent holder will be required to ensure that the following statement appears on promotional and other materials, in any media, that relate to the program offered under the consent:

This program is offered under the written consent of the Minister of Training, Colleges and Universities for the period from (day/month/year) to (day/month/year). Prospective students are responsible for satisfying themselves that the program and the degree will be appropriate to their needs (e.g., acceptable to potential employers, professional licensing bodies, or other educational institutions).

1.14 The consent holder has a positive obligation under the Post-secondary Education Choice and Excellence Act, 2000, to notify the Minister of Training, Colleges and Universities promptly if the consent holder has reason to believe that not all of the terms and conditions of a consent may be met.

2. The applicant hereby agrees to provide the Minister or the Postsecondary Education Quality Assessment Board with any additional material required by the Minister or the board to assess the application.

3. The applicant hereby confirms and warrants that:

3.1 All information and representations provided by the applicant as part of this application, including information given in the Organization Review Submission and the Quality Assessment Review Submission, are true.

3.2 This application was duly approved by the applicant’s governing body or by another representative duly authorized to bind the applicant on

________________________
(date of approval)
at

________________________
(place of approval)

________________________

Dr. Gary Polonsky
Name of institutional representative

President and Vice-Chancellor
Position in applicant organization

Signature
Date

Bachelor of Science (Honours) in Forensic Science