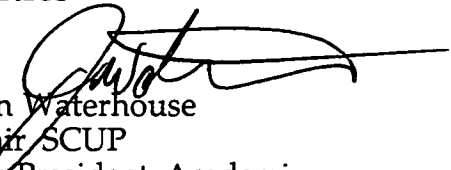


SIMON FRASER UNIVERSITY

S.02-47

Senate Committee on University Priorities Memorandum

TO: Senate

FROM:  John Waterhouse
Chair, SCUP
Vice President, Academic

RE: Transition of TechBC Graduate Programs DATE: May 22, 2002

Attached is a proposal from the Dean of Graduate Studies for the transition of the TechBC Graduate Programs. Not included in this material is a 200-page document containing all of the new course descriptions. This information can be inspected in the office of the Assistant Director, Graduate Records or an electronic copy can be requested from the Dean of Graduate Studies.

At its May 8, 2002 meeting, the Senate Committee on University Priorities (SCUP) reviewed the proposal as approved by the Senate Committee on Graduate Studies. The Masters programs were approved by the Senate Graduate Studies Committee as Cohort Special Arrangements programs. The following motion seeks Senate authorization for the PhD program for the 9 students currently in progress:

Motion:

That Senate approves and recommends to the Board of Governors the extension of the Cohort Special Arrangements in Computing Arts and Design Sciences to include PhD students as outlined in SCUP 02-90.

Once approved by Senate, the proposal is to be submitted to the Board of Governors.

encl.

c. J. Driver, Dean of Graduate Studies

Note: The Cohort Option for Masters Degrees under Special Arrangements procedures are attached at the end of this package for information.

SIMON FRASER UNIVERSITY
DEAN OF GRADUATE STUDIES
MEMORANDUM

DATE: 30TH APRIL 2002
TO: SENATE COMMITTEE ON UNIVERSITY PRIORITIES
CC:
FROM: JONATHAN DRIVER
RE: TRANSITION OF TECH BC GRADUATE PROGRAMS

At the March 2002 meeting of Senate the following motion was passed:

“that Senate approve in principle the admission of graduate students currently enrolled at the Technical University of British Columbia into appropriate graduate programs in accordance with Simon Fraser University Graduate Programs policies and procedures”

At the Senate meeting I described the various options for undertaking this transition, and stated that the Cohort Special Arrangements (CSAR) procedure would be the simplest way to establish a short-term graduate program. With considerable assistance from the staff, students and faculty at TechBC, as well as SFU's registrar's office and the SFU/TechBC transition team, I developed a proposal for a CSAR in Computing Arts and Design Sciences.

This proposal for the transition of TechBC graduate programs to SFU was discussed at a special meeting of Senate Graduate Studies Committee on April 29th 2002. Six motions were passed concerning this proposal. Each is presented below, with explanatory comments in some cases.

Motion 1

That the Cohort Special Arrangements in Computing Arts and Design Sciences (CSARCADS) be approved. Passed

Motion 2

That the CSARCADS program be approved for part-time study. Passed

Motion 3

That SGSC recommend to SCUP and Senate that the CSARCADS program be extended to include PhD students, as described in the proposal. Passed

[note: The regulations for CSAR programs state that they are for masters students; SGSC believes that in this exceptional case Senate should be asked to approve the inclusion of current doctoral students]

Motion 4

That the new courses, described in the proposal, be approved. Passed

[note: The new courses are described briefly in the proposal. There is a 180 page document consisting of all new course approval forms that can be consulted in the office of the Assistant Director, Graduate Records. Most of these courses were previously TechBC courses, and have been renumbered to conform to the SFU system]

Motion 5

That SGSC approve the creation of directed studies courses and thesis course numbers, following the standard SFU format.

[note: This motion was required to correct two minor errors. First, we had omitted to prepare new course proposal forms for the directed studies courses and the thesis designations. Second, we need more directed studies course numbers than described in the original proposal. The proposal has been amended to add more directed studies course numbers, and course descriptions have been added to the full course description package]

Motion 6

That students currently described as "unclassified" at TechBC will be deemed to have the equivalent SFU status of "conditional admission".

[note: Some students were admitted to TechBC as "unclassified" to allow them to make up some background material and decide upon an area of specialization. Such students do not fall neatly into any SFU graduate category, and combine aspects of our "qualifying" and "conditional" students. As most of these students have now completed work that was required, they should be allowed to proceed with their programs]

I believe that all of these motions except Motion 3 are within the mandate of SGSC, and therefore need only be reported to Senate for information. However, in view of the considerable interest expressed by Senate concerning the transition of TechBC programs, I hope that SCUP will forward the entire proposal to Senate, and provide Senate the opportunity to examine the proposal and ask questions about it.

I believe that Motion 3 requires Senate approval, and that SCUP should propose a motion to this effect.

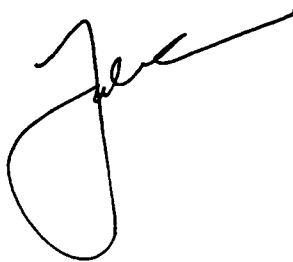
I would be pleased to attend SCUP and answer questions about this proposal.

SIMON FRASER UNIVERSITY
DEAN OF GRADUATE STUDIES
MEMORANDUM

DATE: 8TH MAY 2002
TO: SENATE COMMITTEE ON UNIVERSITY PRIORITIES
CC: MARIAN MCGINN, ASSISTANT DIRECTOR, GRADUATE
RECORDS
FROM: JONATHAN DRIVER
RE: MINOR CHANGES TO C.A.D.S. GRADUATE PROGRAM

I would like to submit a slightly revised version of the cohort special arrangements proposal for Computer Arts and Design Sciences. In order to transfer credit from the former Technical University of B.C. system to the SFU system, we need to create course equivalents at SFU. In the version of the proposal that was approved by SGSC I omitted directed studies courses in the ETEC and MTEC areas. However, some students have already taken special topics courses in those areas, and it may be necessary to offer some in the future. Therefore I have added ETEC 691 through 699 and MTEC 691 through 699 to the proposal.

I will inform SGSC of this change and seek their formal approval.



Proposal for a Cohort Special Arrangements Program
Computing Arts and Design Sciences

Prepared for Senate Graduate Studies Committee

By

Jon Driver, Dean of Graduate Studies

April 2002 (revised 8th May 2002)

Introduction

Early in 2002 the provincial government decided to close the Technical University of British Columbia. In response to a request from the provincial government, SFU developed a proposal to ensure that students currently enrolled at TechBC were given the opportunity to complete their degrees. A second component of the proposal is that SFU will establish a branch campus in Surrey, in order to continue the offering of university degrees.

At the March meeting of SFU's Senate the following motion was approved:

"that Senate approve in principle the admission of graduate students currently enrolled at the Technical University of British Columbia into appropriate graduate programs in accordance with Simon Fraser University Graduate Programs policies and procedures"

There are two ways in which SFU can accommodate TechBC graduate students. First, individual students could be admitted to existing SFU programs, using normal admission procedures. Students will be given this option, but it is unlikely that most will be able to find an appropriate supervisor. A second method is to create one or more "Cohort Special Arrangements" programs, as described in Graduate General Regulations 1.3.4a. This has a number of advantages:

- a. much of the current program structure for TechBC students can be preserved, and current students can make the transition to the SFU program easily;
- b. it does not require existing SFU departments to find the resources to take in unexpected enrollment increases;
- c. it provides a cohort of graduate students who will be available as teaching assistants for the undergraduate programs that will also be taken over by SFU;
- d. it allows the graduate student group to remain associated with ex-TechBC faculty members hired by SFU; these faculty members are already supervising the graduate students;
- e. it allows a trial period in which SFU can evaluate the TechBC programs and plan for the future of graduate programs in new fields, associated with either the Burnaby or the Surrey campus.

The following proposal follows the format normally used for cohort special arrangements programs. However, because the TechBC program already exists and has already received approval by the Ministry of Advanced Education we have paid less attention to documenting the demand for the program (which is demonstrated by the current enrollment). We are also less concerned with documenting the costs (financial, facilities and personnel) because SFU has received a budgetary allocation from the provincial government to cover the costs of running the former TechBC programs.

Rationale and demand

The rationale for this program has been described above. However, we should not overlook the opportunity that this affords SFU. TechBC created distinct programs that served an educational need that may have been lacking at other B.C. universities. In addition to fulfilling our obligations

to former TechBC students we can use the special arrangements program as a test of different approaches to graduate education, and we can build on this temporary program to create a permanent new graduate program. Indeed, this has been the primary use of cohort special arrangements programs in the last few years, resulting in the establishment of the MBA(MOT) and the current testing of the MBA(GAWM). The use of cohort special arrangements programs for this purpose has been reported to the Ministry, and we provide an annual update of such programs.

The demand for the TechBC programs is seen in the current enrollment of 31 students, and in the more than 50 students interested in applying to the program in Fall 2002.

As will be seen, there are two features of this program that do not fit the normal profile of a cohort special arrangements program. First, there are a number of streams within the program. This has been done to accommodate the diversity of graduate programs offered at TechBC. It is more efficient than proposing separate special arrangement programs for each of the TechBC subject areas. It should be noted that although the streams differ, there are required courses common to the streams. Secondly, and more significantly, a Ph.D program is incorporated. The description of the cohort special arrangements program in the graduate general regulations states that these programs are for master's students. When seeking approval for this program, Senate Graduate Studies Committee will be asked to grant special dispensation for the addition of a doctoral stream.

Program structure

The program will have two streams:

- Information Technology concentrates on networked computing and communication systems and their use in business, industry, learning and society-at-large.
- Interactive Arts focuses on new forms of communication, collaboration and performance afforded by computing and communication technology.

The TechBC program was designed to allow students to learn from courses, faculty and other students outside of their particular stream. This was accomplished through both shared curricular elements and a negotiated research culture, much of which will transit to the proposed program and its streams.

The streams will share the following broad features:

- A search for useful models of computation in and among key disciplines.
- Concern for the theory, development, practice and management of new and emergent media.
- A strategy of integration—the combination of disciplines to produce new knowledge and technology beyond the reach of any single disciplinary perspective.
- Collaboration and teamwork across disciplines, as a strategy for innovation, an object of research and as a primary mode of operation in research and teaching.
- Use of technology-mediated learning to enable students to use computing and digital media to amplify their own learning.

In terms of curricula the streams will be joined at their start by a suite of shared courses on research methods, in the middle by cross-stream elective courses and at their end by the thesis. In

addition to these common components, each stream has a set of courses particular to its discipline.

Program descriptions

The structure of the two programs is provided in Tables 1 and 2. A summary of graduate courses is provided later in this document. Detailed course descriptions and approval forms have been circulated electronically. A copy is available for consultation in the office of the Dean of Graduate Studies, and will be archived with the SGSC minutes.

Admission criteria

Students currently enrolled at TechBC will be transferred automatically to the cohort special arrangements program, beginning in 2002-2. If the program has not been approved by the start of the summer semester, students will be admitted temporarily as individual special arrangements students.

If further admissions occur (see below), the minimum standards will be those of SFU, as described in the graduate general regulations. The following guidelines will be applied to new admissions.

Graduate Program in Computing Arts and Design Sciences Admission Requirements

The focus of the graduate programs in Computing Arts and Design Sciences is research development and they will be closely linked with the research clusters and centres that are located at SFU Surrey. The graduate programs will be subject to space availability and limited to those candidates whose research and study interests we are able to support with available faculty members.

Minimum Standard Entrance Requirements for the MASc Program:

1. An undergraduate degree in a field related to the proposed program of study. For example:

- For *Information Technology* – BSc Computer Science; BASc Engineering (Electrical Communications, Computer Engineering).

- For *Interactive Arts* – BFA in Art, Design or Performing Arts; Bachelor of Design; BA in Communications, Art, Art History, Architecture, Linguistics, Psychology, Philosophy; BSc Computer Science. The MASc. In Interactive Arts would be most appropriate for those individuals who have shown an interest in multimedia.

Or

- An undergraduate degree in another related discipline. Applicants under this category are required to make the case for (1) the relationship between the discipline in which they hold their previous degree and this program, and (2) how they would benefit from this program.

2. A minimum cumulative GPA of 3.0 or better at a Canadian university, or equivalent, for the undergraduate degree.

Minimum Standard Entrance Requirements for the Doctor of Philosophy Program:

1. A graduate degree in a field related to the proposed program of study. For example:
 - For *Information Technology* – MSc Computer Science, MSc Engineering (Electrical, Communications, Computer Engineering).
 - For *Interactive Arts* – MFA in Art, Design or Performing Arts, MA in Communications, Art, Art History, Architecture, Linguistics, Psychology, Philosophy; MSc in Computer Science).

Or

- A graduate degree in another, related discipline. Applicants under this category are required to make the case for (1) the relationship between the discipline in which they hold their previous degree or degrees and this program; and (2) how they would benefit from this program.
2. A minimum cumulative GPA of 3.0 or better at a Canadian university, or equivalent, for the Master's degree.

Additional Requirements for both Programs:

English language proficiency requirement:

- Demonstrated proficiency in the English language through one of the following means:
 - A previous undergraduate or graduate degree completed at a university where English is the applicant's primary language of instruction
 - A minimum score of 570 on the paper-based TOEFL test with a minimum TWE score of 5
 - A minimum score of 230 on the computer-based TOEFL test with a minimum TWE score of 5

Portfolio/Interview:

Candidates who are being considered for admission may be required to submit a portfolio of their work and/or be required to attend a personal or telephone interview during the latter stages of the admissions process.

Administrative structure

The cohort special arrangements program will be housed in whatever administrative structure is devised for the former TechBC programs. This document assumes that SFU will develop a program with a director who reports to a faculty dean. If this is the case, a graduate program committee will be created, consisting of three faculty members from the program, and reporting to the director of the program. The faculty members will undertake the normal tasks of a graduate program committee, as outlined in SFU graduate general regulations.

The steering committee will be chaired by one of its members, who will fulfil all the normal duties of a graduate program chair, and will sit on the relevant faculty graduate program committee.

At the time of preparation of this proposal faculty hiring has not been confirmed, and the overall administrative structure of the program has not been finalized. It is therefore not possible to

supply names and curricula vitae for faculty members who will form the steering committee. However, information about faculty members associated with the TechBC program can be found at the TechBC website <http://www.techbc.ca/a-people-people-facultylist.phtml>. Many of these faculty members will continue to supervise students as employees of SFU.

Once students are enrolled at SFU, all SFU graduate general regulations will apply; however, there will be no retroactive application of SFU regulations.

The degrees to be awarded

Students who complete the masters program will be awarded a Masters of Applied Science (Interactive Arts) or Masters of Applied Science (Information Technology) . Students who complete the doctoral program will be awarded a Ph.D.

Budget and tuition

Starting in 2002-3, students will pay tuition fees based on SFU's standard fees for students in research-oriented graduate programs. When calculating student fees and time in program, time spent in the TechBC program will be counted as time spent in SFU's graduate program. For example, if a student has been enrolled at TechBC for two semesters, we will assume that these were the equivalent of two full-time semesters at SFU.

Because of the amount of disruption caused by the transfer of students, any student who will not be taking courses during 2002-2 will be allowed to register on-leave, and on-leave fees will be waived for that semester. (In SFU's fee system a student might be penalized financially for taking an on-leave semester early in the program; no such penalty will be imposed on students who register on leave in 2002-2).

Students who wish to take courses in 2002-2 will either pay the full time fee or the part time fee. Because courses in all programs are worth one credit, students may be classified as part-time if they take 3 one-credit courses or less.

From the beginning of 2002-3 all SFU regulations concerning tuition fees will apply. Masters students must pay a minimum of six full time fee units, unless they complete their programs in less than six semesters; doctoral students must pay a minimum of eight full time fee units, unless they complete in less than eight semesters. Once the minimum fee has been paid, future semesters are charged at the "continuing fee"(half the full time fee). Refer to the SFU Calendar for details of these regulations. For the purposes of these calculations, it will be assumed that every semester of registration prior to 2002-3 can be counted as the equivalent of a full time fee semester. For example, if a master's student completed two semesters at TechBC and registered on-leave for 2002-2, he or she will be required to pay the full fee for three more semesters. A doctoral student in the same situation would pay the full fee for five more semesters.

New course proposals

The program structure has been described in Tables 1 and 2. This section provides brief details of the courses to be offered. All of these courses were part of the TechBC program. It should be noted that the TechBC program offered instruction in "modules", that were shorter and worth less credit than an SFU semester-length course. It is intended to retain the structure in the cohort special arrangements program, hence the small number of credit hours per course. Note that ETEC and MTEC courses are not central to either program, but may be offered as electives. These courses were offered in other graduate programs at TechBC that have not been transferred to SFU.

Brief biographies of faculty members who will teach these courses are available on the TechBC website <http://www.techbc.ca/a-people-people-facultylist.phtml>.

Full course descriptions and sample course outlines have been sent electronically, a copy can be consulted in the Dean of Graduate Studies Office, and an archived set will be stored with SGSC minutes.

Interdisciplinary

INTD 600 Research Methods: Problem Formulation (1 credit)

The course outlines the research enterprise. It introduces concepts and methods by which research is structured, understood and conducted. Key concepts include levels of predictive power offered by different kinds of research, relationships between question and methodology, the structure of models and issues of validity and causation.

INTD 601 Research Methods: Research Methodologies and Tools (1 credit)

The course has the dual purposes of introducing students to key methodologies used by researchers in the graduate program and providing hands-on experience with several basic research tools.

INTD 602 Research Methods: Anatomy of a Research Area (1 credit)

The course is a case study of a broad research area. Its goals are to show relationships between question and method and how results are used both within a line of inquiry and by other researchers working in the area.

INTD 603 Graduate Seminar (1 credit)

This is a weekly seminar featuring guest, faculty or graduate students presenting overviews of their current research. The goal of these presentations for graduate students is to help them analyze on-going research as a basis for formulating their own graduate programme and thesis questions. By the conclusion of this seminar, graduate students should have a first draft of their programme of study and a developed research (thesis) question.

INTD 604 Graduate Seminar (1 credit)

As in the previous module, graduate students attend a weekly research discussion with visiting and faculty researchers. The goal is to enable students to generalize their critical abilities to diverse research beyond one's own "home" specialty. Outcomes of this work are increased cross-disciplinary connections for framing research questions and proposals, and a better basis to engage team research efforts. By the conclusion of this module, students should be able to provide cogent, reasoned critiques of research from varied disciplinary specialties.

Interactive Arts

IART 600 Performance in Media Practice and Theory (1 credit)

This course challenges learners to expand their practical and theoretical approaches to performance by devising performance experiments with camera mediated telematic links and avatar-based MUEs (multi user environments) while exploring critical discourses around embodiment, virtuality, gender and communication.

IART 601 The Body: Practice and Theory (1 credit)

This course is designed to explore philosophical and critical approaches to embodiment and to challenge learners to apply these ideas to responsive spaces, artificial life and wearables. Phenomenological skills for analyzing new physical and technological hybrids will be cultivated.

IART 602 Non Linear Narrative (1 credit)

This course traces narrative concepts and processes, and their transformation across media/domains. Learners investigate narrative dynamics, structures and aesthetics in linear and multi-linear media. The course develops analytical and critical skills through readings, discussions, and the evaluation of interactive experiences.

IART 603 Interface and Navigation (1 credit)

This course explores and critiques a range of contemporary design approaches to interface and navigation. Research projects are in the form of a design brief, which applies contemporary and historical models of interface, and explores interface mental models as defined by representation, design and production. Topics include multi-sensory interfaces, gaming interface, emerging device design, cognitive theories of enactment and navigation.

IART 604 Electronic Culture (1 credit)

This course introduces key concepts in current discussions of electronic culture, concentrating on complexity, identity, economy, and space and time; and explores their use as both analytical tools and frameworks for creative practice.

IART 605 Authoring Methodologies (1 credit)

A number of authoring methodologies will be examined in the context of new media. A collaborative project will then be designed and implemented using one or more of these techniques. Authoring methodologies have broad applications in a variety of development contexts including interactive arts, IT, and management. The reading resources for the course are drawn from these three areas.

IART 606 Multimedia Programming (1 credit)

This course will provide an introduction to programming theory and techniques for audio, video, graphics and text manipulation. The concept of code as an artistic material and formal compositional processes will be examined within a self-directed activity set.

IART 607 Designing Virtuality (1 credit)

This course explores and critiques a range of contemporary design approaches to the concept of virtuality. Topics include virtuality and materiality, information design, and post-cybernetic theory particularly in relation to representation, remote sensing and display, networked environments and communities, augmented realities, and tele-presence.

IART 608 Experience Design (1 credit)

This course examines the emerging concept of experience design. Computing technology and its use has fundamentally changed design fields. It has emphasized the interaction and experience of the user. This course provides methods and tools for learners to critically analyze and generate experience design artifacts and events.

IART 609 Design And Creative Methodologies (1 credit)

This course explores and critiques a range of contemporary creative and design methodologies. Topics include strategies from a variety of disciplinary practices including design process, scenario building, and theatrical structures. This includes improvisational processes, collaborative processes, user-centered processes in networked environments and communities, technologically mediated tools, and environments used in the support of creative and design processes.

IART 611 Reception Analysis (1 credit)

The course introduces the learner to the terminology, concepts and techniques of reception analysis. The course includes several analytical approaches, but favors an understanding of the reader's active role in the construction of media meaning.

IART 612 Multimedia Applications (1 credit)

In this course learners will explore multimedia applications to produce an interactive non-sequential work using graphics, sound, text, and typography. Through on-line collaborative exchanges, learners will research and analyze contemporary works and technical resources. Conceptual problem solving activities will be used in class to emphasize visual literacy and foster the development of a personal visual vocabulary.

IART 613 Kinesthetic and Active Space (1 credit)

Kinesthetic and Active Space explores convergences between physical, architectural, perceptual, invisible and networked space from the starting point of human kinesthetic sensibility. This course takes a fundamentally dynamic approach to theoretical paradigms and grounds these in physical experimentation.

IART 614 History of Art and Technology (1 credit)

This course will provide learners with an historical overview of the dynamic relationship between art and technology. It will show how human creativity gives rise to technical innovation and how those innovations shape cultural expression. Most importantly it will demonstrate how digital media is an extension of human mind/body/culture rather than something being imposed on it. Learners will be strongly encouraged to study in teams.

IART 691 to 699 Directed Studies (1, 2 or 3 credits per course)**IART 898 MASc Project/Research Paper****IART 899 PhD thesis****Information Technology****ITEC 600 Advanced Database Systems (1 credit)**

This course expands the knowledge of the database systems into the area of multimedia database systems and techniques used for indexing multimedia. Learners will use advanced concepts and terminology of multimedia database systems. The focus is on the advanced database topics covering indexing mechanisms for multidimensional data, image databases, and text databases. Further the semi-structured data, XML and metadata standards are presented together with their application to multimedia databases and their querying.

ITEC 601 Computer Graphics (1 credit)

A condensed graduate course for IT majors, with the emphasis on technical aspects of 3-D computer graphics. Hands-on components include development of demo programs, some of those implementing advanced algorithms. Although learners are allowed to use any programming language, Java is the recommended one. The course level is intermediate to advanced and requires from learners good math background and strong programming skills. Learners will acquire new skills in implementing major computer graphics concepts and methods whilst working on their individual projects. Some of these methods, such as smooth shading and rendering are rather advanced and require skills in developing efficient computer programs.

ITEC 602 Software Engineering Processes (1 credit)

The course builds on the knowledge of software engineering processes learners may have acquired either from their previous study or via their practice in the software development. The course provides an overarching and formalizing view of the software engineering process and issues that impact on successful implementation. Starting with best and worst practices, the Capability Maturity Model and its critique are presented. Software development lifecycle with focus on the requirements process, architectural design and development phase are covered.

ITEC 603 Distributed Operating Systems (1 credit)

This course extends the fundamentals of operating systems and guides the learners towards the recent advancements in distributed operating systems. This course develops a conceptual and practical understanding of distributed operating systems. It reviews the basic features of operating systems, discusses the core concepts of distributed operating systems, and enables learners to specialize in specific topics.

ITEC 604 Stochastic Signal Processing (1 credit)

This course provides an introduction to theory and algorithms used for analysis and processing of stochastic signals and their applications.

Pre-requisite: Familiarity with the following is required: Signal Processing and Communications or equivalent. Basic Probability and Random Variables. Linear Algebra.

ITEC 605 Adaptive Filtering and Estimation (1 credit)

In conjunction with the Stochastic Signal Processing course, this course provides a unified introduction to the theory, implementation, and applications of statistical and adaptive signal processing methods. Focus is on the key topics of spectral estimation, signal modeling, and adaptive filtering.

Pre-requisite: Stochastic Signal Processing or equivalent

ITEC 606 Network Security and Cryptography (1 credit)

A practical survey of network security fundamentals, applications, and standards. The emphasis is on applications that are widely used on the Internet and for corporate networks, and on standards, especially Internet standards that have been widely deployed.

ITEC 607 Intelligent Interfaces (1 credit)

This course examines how intelligent interfaces can facilitate human-computer interaction and collaboration. It introduces theories and techniques for intelligent interaction, and then looks at examples of multi-modal and conversational interfaces.

ITEC 608 E-Business Technology (1 credit)

This course examines E-Business protocols, such as auctions and fair division, from the perspective of game theory and computational complexity.

ITEC 609 Advanced Networking Protocols (1 credit)

This course critically analyzes some of the networking protocols and synthesizes an integrated review of the architectural foundations of networking in terms of the underlying protocols.

ITEC 610 Wireless Communications (1 credit)

This course examines what is and isn't possible with contemporary wireless systems, focusing on both the underlying technologies and applications. The course takes a breadth wise look at the spectrum of wireless communications with a scope for specific in-depth technological explorations.

Pre-requisite: Learners are expected to have some computer programming and networking background.

ITEC 611 Image Processing (1 credit)

The processing of digital images is given mathematical context by the notion of experimental observation. This course introduces a selection of resulting techniques, including linear system theory and fourier transforms, and an overview of the practical problems that they solve.

ITEC 614 3D Computer Animation (1 credit)

This graduate course introduces 3D animation concepts while immersing the learners in a team based, interdisciplinary animation project. The learners will create and update an in-house standalone animation resource that will be available to the school and future classes.

ITEC 615 Virtual Reality (1 credit)

The concepts and technology underlying engagement, immersion, presence, and suspension of disbelief are introduced and related to the design of virtual environments. The trade-off between task engagement and technical quality will be explored through projects.

ITEC 691 to 699 Directed Studies (1, 2 or 3 credits per course)**ITEC 898 MASc Project/Research Paper****ITEC 899 PhD thesis****Educational Technology & Learning****ETEC 600 Learning with Asynchronous Communications (1 credit)**

This course will introduce graduate learners to teaching and learning with asynchronous, computer-mediated conferences. It will survey related learning theory, research on effectiveness, design of learning activities, facilitation, assessment, and features of conferencing systems.

ETEC 601 Problem Based Learning (1 credit)

This course will introduce graduate learners to teaching and learning with problem-based learning (PBL). Delivered using PBL, the course includes related learning theory, research on effectiveness, design of learning activities, assessment, facilitation, and computer-mediated delivery.

ETEC 691 to 699 Directed Studies (1, 2 or 3 credits per course)**Management & Technology****MTEC 600 Services Management (1 credit)**

This course introduces graduate learners to the various services related business models, both B2C and B2B, that are established and evolving in the realm of e-Business. The issues of integration of web based services with traditional brick and mortar models are also explored.

MTEC 601 Technology and Supply Chain Management (1 credit)

This graduate course introduces learners to the central ideas of supply chain management. The web enabled approach is emphasized and compared with traditional methods. Contemporary best practices are researched and discussed.

MTEC 602 Developing New Products (1 credit)

This course explores the strategic and operational aspects of new product development including critical success factors. It also provides a focus on the pre-development phase of product innovation.

MTEC 603 Branding (1 credit)

This course focuses on the ways that brands acquire and sustain value in the marketplace. Learners study the meaning, uses, processes, and methodologies for creating effective and winning brands. The evolution of brand value strategies is also explored.

MTEC 604 Internet Advertising (1 credit)

The focus is on the issues, theories, tools, and practice of marketing communications in the Internet marketplace and the role of Internet advertising to businesses. Learners will acquire the analytical skills that are needed to plan, design, implement and evaluate internet advertising campaigns

MTEC 605 Management of High Tech Professionals (1 credit)

The course is focused on how to develop competitive advantage in e-business through leadership and the effective management of people. Topics examined include corporate culture, change management, learning organizations, and various human resource practices.

MTEC 606 Global Business in Technology Industries (1 credit)

The course is focused on key issues in conducting international business. Learners study strategy formulation for international markets, as well as the important role of national culture in business. In addition, strategic alliances in technology companies are examined.

MTEC 607 Strategic Management of Innovation (1 credit)

This course reviews some fundamental concepts of strategy in the context of technological innovation, examines the role of core competencies in technology development, and identifies and discusses the various components or dimensions that make up a technology strategy. Case studies are used to illustrate theory with application in the e-business context.

MTEC 608 High Tech Entrepreneurship (1 credit)

In today's age of rapid technological progress, ventures are being created daily to satisfy new business needs. The creation of new technology-based ventures is becoming a more popular career choice for science and technology professionals with entrepreneurial ambition. This is a fast-paced, hands-on course that takes the learner through the key stages of new venture creation including researching the product opportunity, protecting the venture's intellectual property, planning the venture's seed and start-up stages, determining the financial needs and resources, developing the business plan and valuing the venture.

MTEC 609 E-Customer Relationship Management (1 credit)

The course is focused on the evolution of customer relationship management from mortar and brick establishments to the Web. Focus is on issues of e-loyalty and customer services, as well as current practices.

MTEC 610 Social Context of E-Business (1 credit)

The human element on the Web is important. In this course focus is on the development of trust in online communities, how virtual teams operate successfully, and ethical issues that impact online interaction, with particular emphasis on e-business.

MTEC 611 Knowledge Management Tools & Technologies (1 credit)

This course investigates the various information systems and technologies used for implementing knowledge management practices within an organization. It describes a framework for analyzing these knowledge management tools in terms of knowledge structure and knowledge services (KSS). Industry examples of knowledge services are discussed in terms of infrastructure services, core services and packaged services.

MTEC 613 E-Business Strategy & Models (1 credit)

Effective strategy is central to e-business success. In this course, emphasis is on examination on various strategies and models as they apply in e-business. Issues, strategic choices and challenges are highlighted related to e-business implementation.

MTEC 691 to 699 Directed Studies (1, 2 or 3 credits per course)

Admissions planning

The cohort program will not run past August 31st 2005. If permanent graduate program(s) are established in relevant areas, students in the cohort program will be transferred to them. If suitable permanent programs are not developed, any students remaining in the cohort special arrangements program in 2005-3 will be transferred to individual special arrangements programs in order to complete their degrees.

4

No admissions of doctoral students will be permitted to the cohort special arrangements program in the 2002/2003 academic year. If the planning for a permanent program is well advanced by 2003-1, doctoral admissions will be permitted. Masters admissions will be permitted for the 2002/2003 and 2003/2004 academic years in order to maintain a population of about 30 FTE.

Admissions should be allowed to this program for the following reasons:

- a. to maintain a viable graduate population for the transition from TechBC to SFU programs
- b. in anticipation of the development of a new permanent graduate program at SFU; according to guidelines established by Senate this planning should be complete by spring 2003, and admissions in 2003-3 will depend on this plan being developed.

APPENDIX A
NEW COURSE PROPOSALS

1. In order to avoid excessive paperwork, all new course proposals have been circulated to SGSC in electronic format. Originals may be consulted in the Dean of Graduate Studies Office and office of the Assistant Director, Graduate Records (secretary of SGSC).
2. In order to minimise workloads, the following signature sheet will be substituted for individual signature sheets on each proposed course:

The following signatures represent approval for all former TechBC graduate courses transferred to SFU and given SFU course numbers, according to the attached conversion table. The following signatures all represent approval for the development of directed studies courses IART 691 to 699, ITEC 691 to 699, ETEC 691 to 699, MTEC 691 to 699 and for MASc projects and research papers and PhD theses IART 898, 899, ITEC 898, 899.

Chair, Graduate Program Steering Committee, Computing Arts and Design Science

Director, SFU Surrey Program

Chair, Graduate Program Committee, Faculty of Applied Sciences

Dean of Applied Sciences

Dean of Graduate Studies

TechBC Name	Tech BC Number	SFU Name	SFU Number	Notes
INTD	600.1	INTD	600	
	600.2		601	
	600.3		602	
	601.1		603	
	601.2		604	
IART	600.1	IART	600	
	601.1		601	
	602.1		602	
	603.1		603	
	604.1		604	
	605.1		605	
	606.1		606	
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	612.1		612	
	613.1		613	
	614.1		614	
			691-699	Directed Studies
			898	MAScProject
			899	PhD Thesis
ITEC	600.1	ITEC	600	
	601.1		601	
	602.1		602	
	603.1		603	
	604.1		604	
	605.1		605	
	606.1		606	
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	611.1		611	
	614.1		614	
	615.1		615	
			691-699	Directed Studies
			898	MASc Project
			899	PhD Thesis
ETEC	600.1	ETEC	600	

	601.1		601	
			691-699	Directed Studies
MTEC	600.1	MTEC	600	
	601.1		601	
	602.1		602	
	603.1		603	
	604.1		604	
	605.1		605	
	606.1		606	
	607.1		607	
	608.1		608	
	609.1		609	
	610.1		610	
	611.1		611	
	613.1		613	
			691-699	Directed Studies

A COHORT OPTION
for the
MASTERS DEGREE UNDER SPECIAL ARRANGEMENTS

This is a proposal that Graduate Admission under Special Arrangements be amended to provide for a cohort option for the Masters degree.

I. BACKGROUND

Graduate study under Special Arrangements is defined as work toward a degree that falls "outside or between existing programs" but which has a "well-developed plan of studies in an area which can be shown to have internal coherence and academic merit and in which the University has appropriate expertise and interests among its faculty members." (Graduate Regulation 1.3.4)

Until this time, this mode of study has been open only to individual students, but it is becoming clear that the flexibility to create a program focused on a specific interdisciplinary goal need not be limited to individual students. The opportunity to apply the Special Arrangements designation to groups of students would be very useful. It would enable new and innovative programs to be offered to specific groups of students (as with the individual program), it would permit the prototyping of programs which might eventually be regularly established under normal procedures, and it would give the university the opportunity to respond quickly and responsibly to new areas of need without creating cumbersome infrastructures that then must be maintained.

As with the individual Special Arrangements, the cohort option would exist only for the life of the cohort Special Arrangement and resources would have to be assured only for the duration of the particular program. Once the cohort had completed its work, the program would cease to exist. Any subsequent cohort program in the same area would require its own separate approval. Because the approval for Special Arrangements rests with the Senate Graduate Studies Committee, the review process can be done in a timely way. Approval will be given only if the committee is confident that the proposed program has academic merit and that adequate resources are available. The Dean of Graduate Studies will be responsible for reviewing the program budget and insuring that all necessary

financial and other resource commitments are in place and are in conformity with University policies. If the proposed tuition fees differ from the normal university fee schedule, Board of Governors' approval will also be required.

II. STEERING COMMITTEE

The Academic Steering Committee will be composed of at least four SFU faculty members drawn from the departments relevant to the course of studies, including at least one faculty member from each constituent discipline. The members of the committee will create and present the proposal for the program, administer the individual program, and provide for instruction and supervision. It will be their responsibility to construct the curriculum for the program as well as to insure that it is adequately delivered. They are also responsible for recommending admissions and reviewing students' progress. The Steering Committee will function as the cohort's Graduate Program Committee as set out in Graduate General Regulation 1.2.

III. PROPOSED CALENDAR ENTRY

1.3.4.a Cohort Special Arrangements (to follow current 1.3.4, attached)

These highly structured cohort-based programs are designed to meet the educational needs of specific student groups in fulfilling the requirements for a Masters degree, where these needs cannot be met within existing programs. Each program will integrate studies from across two or more disciplines and will involve a curriculum and requirements recommended by each program's Academic Steering Committee and approved by the Senate Graduate Studies Committee. Students may undertake this degree program only through specific admission to the cohort program. The admission criteria, degree requirements and any other special conditions for an individual Cohort Special Arrangements Program must be approved in advance by the Senate Graduate Studies Committee; these may not be below the minimum admission and degree requirements of regular graduate programs. In some instances, tuition fees for these programs may differ from the regular graduate fee schedule published in the University Calendar, and will be announced separately.

IV. FORMAT FOR PROPOSALS

Any proposal for a Cohort Special Arrangements Program will include:

1. A statement of the field of study and its core areas to be covered by the proposed arrangements and the rationale for the program. This statement will indicate the academic merit and coherence of the program; the expertise necessary to mount the program and evidence that such expertise is present and available within the SFU faculty and that the program cannot be pursued within existing SFU graduate Programs.
2. The names and curricula vitae of all members of the Steering Committee. For each member, a brief statement of research interests and their relevance to the proposed program must be provided. Each member should indicate willingness to participate and each relevant Department Chair should provide explicit assurances that the required teaching and other resources will be made available, in accordance with point #5, below.
3. The criteria for admission into the program, including provision for and scheduling of any qualifying work that may be required of some students.
4. The minimum academic requirements for the degree, e.g. courses, examinations, field work and/or thesis. To the maximum extent possible, the academic requirements should resemble those of graduate programs in relevant areas and should include where possible regular SFU graduate courses.
5. A timetable for the completion of the requirements. This statement should include provision for students who may be unable to complete the requirements in a timely fashion for unexpected reasons.
6. A statement as to what University facilities will be needed with approvals for their use by the appropriate authorities.
7. A budget for the program which specifies any additional direct costs and details the revenue sources through which these will be met, including any unusual fee structure. The budget will be

reviewed by the Dean of Graduate Studies before the program is considered by the Senate Graduate Studies Committee, in order to assure that all necessary commitments are in place. The adequacy of library resources must be confirmed by the University Librarian.

V. APPROVAL PROCESS

If the Dean of Graduate Studies is satisfied with the financial arrangements for the program, the Senate Graduate Studies Committee will consider the program on its academic merits. The Committee may decide that recommendations for admission be subject to review by the Senate Graduate Studies Committee or a sub-committee thereof. Approved programs will be forwarded to the Senate Committee on Academic Planning for information. Programs which involve international activities will be forwarded to the Senate Committee on International Activities for relevant approvals. Any exceptional fee structure will be forwarded to the Board of Governors for approval. Following all required approvals, the program may be advertised and implemented.

VII. FINAL REPORT

At the conclusion of the cohort special arrangements program the Steering Committee will submit a final report to the Senate Graduate Studies Committee. In addition to detailing the outcome of the program for individual students, the Committee will assess the success of the program and advise on its suitability for repetition with a new group of students. This report will be forwarded to the Senate Committee on Academic Planning for information.

March 25, 1997

Full Special Arrangements Calendar entry:

1.3.4. Admission Under Special Arrangements

Exceptionally able applicants, who wish to work for a Masters or Doctoral degree outside or between existing programs at Simon Fraser University, may apply to work under Special Arrangements. A student applying for Special Arrangements must have a well-developed plan of studies in an area which can be shown to have internal coherence and academic merit, and in which the University has appropriate expertise and interests among its faculty members.

Graduate students applying or working under Special Arrangements are required to conform to Senate regulations for graduate students. However, there are additional regulations which concern only students applying or working under Special Arrangements. Enquiries about these regulations should be directed to the Dean of Graduate Studies by January 1st of each year for admission to the Fall semester.

Students working under Special Arrangements may be required to take a selection of courses from existing programs. Other courses open to Special Arrangements students are:

- SAR 895-3 Special Topics to be selected by the Student and the Supervisory Committee.
- SAR 896-6 Special Topics to be selected by the Student and the Supervisory Committee.
- SAR 897-5 Special Topics to be selected by the Student and the Supervisory Committee.

Special Arrangements Masters and Doctoral thesis work are assigned the following numbers:

- SAR 898 Masters Thesis
- SAR 899 PhD Thesis

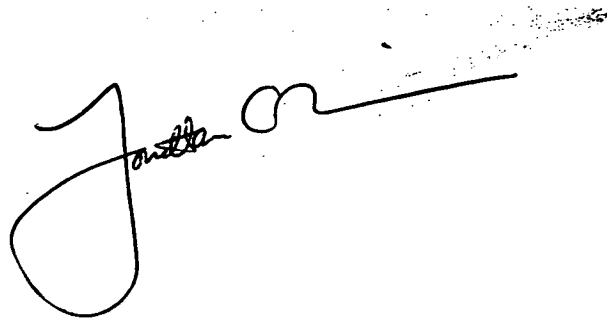
1.3.4.a Cohort Special Arrangements

These highly structured cohort-based programs are designed to meet the educational needs of specific student groups in fulfilling the requirements for a Masters degree, where these needs cannot be met within existing programs. Each program will integrate studies from across two or more disciplines and will involve a curriculum and requirements recommended by each program's Academic Steering Committee and approved by the Senate Graduate Studies Committee. Students may undertake this degree program only through specific admission to the cohort program. The admission criteria, degree requirements and any other special conditions for an individual Cohort Special Arrangements Program must be approved in advance by the Senate Graduate Studies Committee; these may not be below the minimum admission and degree requirements of regular graduate programs.

SIMON FRASER UNIVERSITY
DEAN OF GRADUATE STUDIES
MEMORANDUM

DATE: 3RD JUNE 2002
TO: SENATE
CC:
FROM: JONATHAN DRIVER
RE: PROGRAM IN COMPUTER ARTS AND DESIGN SCIENCES

The description of the Cohort Special Arrangements Program in Computer Arts and Design Sciences (S.02-47) should have included two tables summarizing the proposed programs. These tables were seen by SGSC and SCUP, but were inadvertently omitted from the package prepared for Senate. I apologize for this omission, and I am providing the missing documents for your files.

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Interactive Arts MAsc and PhD

Graduate Program in Computing Arts and Design Sciences Table 1

All courses are offered in five week, modular segments.

IART	Interactive Arts Courses
INTD	Interdisciplinary Courses
ITEC	Information Technology Courses
MTEC	Management and Technology Courses
ETEC	Educational Technology & Learning Courses

6 Credits These interdisciplinary courses are required for all graduate students

INTD 600 Research Methods: Problem Formulation
Pre-requisite(s): None

INTD 603 Grad Seminar: Research Strategies

Co-requisite(s): Recommended that this course be taken in proximity to INTD 600, INTD 601, INTD 602

INTD 601 Research Methods: Research Methodologies and Tools
Pre-requisite(s): INTD 603 or another approved research methods course

INTD 604 Grad Seminar: New Research Directions

Co-requisite(s): Recommended that this course be taken in proximity to INTD 600, INTD 601, INTD 602

INTD 602 Research Methods: Anatomy of a Research Area
Pre-requisite(s): INTD 600 and INTD 603 or another approved research methods course

DISCIPLINARY OR DIRECTED STUDIES

These courses can be selected from our current list of offerings. Minimum required: 16 credits for MAsc; 14 for PhD
Disciplinary Offerings for Interactive Arts include:

IART 600 Performance in Media Practice and Theory

IART 601 The Body: Practice and Theory

IART 602 Non-Linear Narrative

IART 603 Interface and Navigation

IART 604 Electronic Culture

IART 605 Authoring Methodologies

IART 606 Multimedia Programming

IART 607 Designing Virtuality

IART 608 Experience Design

IART 609 Design and Creative Methodologies

IART 610 (Currently Unassigned)

IART 611 Reception Analysis

IART 612 Multimedia Applications

IART 613 Kinesthetic and Active Space

IART 691 to 699 Directed Studies*

IART 614 History of Art and Technology

***DIRECTED STUDIES:** Directed Studies are courses created to meet the specialized needs of graduate students in an area where a formal course does not exist. Each course is normally created in consultation with the student, the Faculty Advisor and the proposed instructor.

INTERDISCIPLINARY

Required Interdisciplinary Component – total of 3 credits for the MAsc Degree; total of 6 credits for the PhD Degree.
These courses can be selected from disciplinary offerings in other program areas: MTEC, ITEC or ETEC.

RESEARCH PAPER/PROJECT – MAsc

IART 898 MAsc Project/Research Paper
Required Research Paper/Project Component

THESIS COMPONENT – PhD

IART 899 PhD Thesis
Required Thesis Component

Information Technology MASc and PhD

Graduate Program in Computing Arts and Design Sciences Table 2

All courses are offered in five week, modular segments.

IART Interactive Arts Courses
INTD Interdisciplinary Courses
ITEC Information Technology Courses
MTEC Management and Technology Courses
ETEC Educational Technology & Learning Courses

RESEARCH	5 Credits These interdisciplinary courses are required for all graduate students	
	INTD 600 Research Methods: Problem Formulation Pre-requisite(s): None	INTD 603 Grad Seminar: Research Strategies Co-requisite(s): Recommended that this course be taken in proximity to INTD 600, INTD 601, INTD 602
	INTD 601 Research Methods: Research Methodologies and Tools Pre-requisite(s): INTD 603 or another approved research methods course	INTD 604 Grad Seminar: New Research Directions Co-requisite(s): Recommended that this course be taken in proximity to INTD 600, INTD 601, INTD 602
	INTD 602 Research Methods: Anatomy of a Research Area Pre-requisite(s): INTD 600 and INTD 603 or another approved research methods course	

DISCIPLINARY OR DIRECTED STUDIES

These courses can be selected from our current list of offerings. Minimum required: 16 credits for MSc and 14 for PhD
Disciplinary Offerings for Information Technology include:

DISCIPLINARY	ITEC 600 Advanced Database Systems	ITEC 601 Computer Graphics
	ITEC 602 Software Engineering Processes	ITEC 603 Distributed Operating Systems
	ITEC 604 Stochastic Signal Processing	ITEC 605 Adaptive Filtering and Estimation
	ITEC 606 Network Security and Cryptography	ITEC 607 Intelligent Interfaces
	ITEC 608 E-Business Technology	ITEC 609 Advanced Networking Protocols
	ITEC 610 Wireless Communications	ITEC 611 Image Processing
	ITEC 612 Digital Communications	ITEC 613 Multimedia Communications
	ITEC 614 3D Computer Animation	ITEC 615 Virtual Reality
NARY	ITEC 691 to 699 Directed Studies*	

DIRECTED STUDIES: Directed Studies are created to meet the specialized needs of graduate students in an area where a formal course does not exist. Each course is normally created in consultation with the student, the Faculty Advisor and the proposed instructor.

INTERDISCIPLINARY

Required Interdisciplinary Component – total of 3 credits for the MSc Degree; total of 6 credits for the PhD Degree.
These courses can be selected from disciplinary offerings from other program areas: IART, ETEC or MTEC.

RESEARCH PAPER/PROJECT - MSc

ITEC 898 MSc Project/Research Paper
Required Research Paper/Project Component

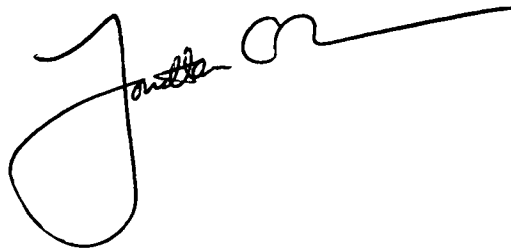
REQUIRED THESIS COMPONENT - PhD

ITEC 899 PhD Thesis
Required Thesis Component

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DEAN OF GRADUATE STUDIES
MEMORANDUM

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TO: SENATE
CC:
FROM: JONATHAN DRIVER
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INTERDISCIPLINARY

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Required Thesis Component