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MEMORANDUM

ATTENTION	Senate	DATE	June 2, 2017
FROM	Gordon Myers, Chair Senate Committee on Undergraduate Studies	PAGES	1/1
RE:	New Course Proposals		

For information:

Acting under delegated authority at its meeting of June 1, 2017 SCUS approved the following curriculum revisions effective Spring 2018.

a. Faculty of Applied Sciences (SCUS 17-26a)1. School of Mechatronic Systems Engineering

(i) New Course Proposal: MSE 429-3, Advanced Kinematics for Robotic Systems

b. Beedie School of Business (SCUS 17-26b)

(i) New Course Proposals:

- BUS 330-3, Income Taxation for Individuals
- BUS 331-3, Corporate Taxation
- BUS 465-3, Business Systems Development

c. Faculty of Science (SCUS 17-21c)1. Department of Molecular Biology and Biochemistry

(i) New Course Proposal: MBB 302-3, Energy: From Cells to Society with B-Sci designation.


COURSE SUBJECT/NUMBER
COURSE TITLE

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

MSE 429 - Advanced Kinematics for Robotic Systems

AND

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Advanced Kinematics for Robotic Systems

CAMPUS where course will be taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

Introduction to kinematics of robot manipulators (serial and parallel). Serial: Forward and inverse kinematics for manipulators with spherical and non-spherical wrists. Parallel: Loop-closure equations and methods for solving polynomial systems. Trajectory generation: Joint and Cartesian spaces. Jacobians, velocity and static force analyses, singularities (kinematic, static and architectural). Introduction to dynamics.

LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

No additional material is required.

Library report status

RATIONALE FOR INTRODUCTION OF THIS COURSE

This course is intended to consolidate three-dimensional kinematics of rigid bodies introduced in MSE 222 and to expand the application and implementation of modern industrial robotic systems offered in MSE 480. The course will include additional seminars (approx. 4 during the term) that will cover specific problems and methods beyond the course material.

SCHEDULING AND ENROLLMENT INFORMATION

 Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:

This course was first offered in Fall 2016 and will be taught annually thereafter.

 Will this be a required or elective course in the curriculum? Required Elective

What is the probable enrollment when offered? Estimate:

30





CREDITS

Indicate number of credits (units): **3**

Indicate number of hours for: Lecture **3** Seminar **3** Tutorial Lab Other

FACULTY Which of your present CFL faculty have the expertise to offer this course?

Flavio Firmani
Siamak Arzanpour

WQB DESIGNATION (attach approval from Curriculum Office)

PREREQUISITE

Does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses?
If so, this should be **noted in the prerequisite**.

MSE 222. Students with credit for MSE 490 - Advanced Kinematics for Robotic Systems (Fall 2016) cannot take MSE 429 for further credit. ENSC students declared as Systems Option majors may not take this course. Students may not take both ENSC 488 and MSE 429 for credit.

COREQUISITE

STUDENT LEARNING OUTCOMES

Upon satisfactory completion of the course students will be able to:

- Understand reference frame attachments at the joints of serial and parallel manipulator.
- Solve problems involving systems of non-linear equations and polynomial equations that result from the inverse kinematics (serial) and forward kinematics (parallel), respectively.
- Generate joint trajectories (point-to-point and continuous) using mathematical schemes.
- Analyse velocity and static force problems. Understand the types of singularities in parallel robots.
- Determine the required torques for a particular manipulator design and trajectory.
- Work collaboratively with other students in a team course project.

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

Access to the computer laboratory. Matlab and SolidWorks License.

OTHER IMPLICATIONS

- Articulation agreement reviewed? YES NO Not applicable
- Exam required: YES NO
- Criminal Record Check required: YES NO

APPROVALS: APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.

1 Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.

Chair, Department/School Date

Chair, Faculty Curriculum Committee Date

2 Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.

Dean or designate Date

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

Nil.

Other Faculties' approval indicates that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

_____ Date _____

_____ Date _____

3 SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.

COURSE APPROVED BY SCUS (Chair of SCUS):

_____ Date _____



COURSE SUBJECT BUS . NUMBER 330,

COURSE TITLE LONG -for Calendar/schedule no more than 100 characters including spaces and punctuation

Income Taxation for Individuals

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Income Taxation for Individuals

CAMPUS where course will be normally taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION -50 words max. Attach a course outline. Don't include WQ3 or prerequisites info in this description box

Basic knowledge of the underlying principles and concepts of the Canadian Income Tax Act and the application of its rules to practical situations. It also examines the general income tax planning principles and equip students with the ability to identify tax planning opportunities for individuals.

REPEAT FOR CREDIT YES NO Total completions allowed Within a term? YES NO

LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit www.lib.sfu.ca/about/overview/collections/course-assessments.

RATIONALE FOR INTRODUCTION OF THIS COURSE

Currently, BUS 329-4 cover Income Tax topics for students interested in pursuing the CPA designation, or just wanting to gain an Introduction to Canadian income tax laws and regulations. It is primarily a practical course. By splitting the course into two, we will be able to add more material relating to tax theory and tax policy and make sure that students are able to keep pace with the changes that occur from time to time with in the CPA Competency Map.



SCHEDULING AND ENROLLMENT INFORMATION

Term and year course would first be offered (e.g. FALL 2016)

Term in which course will typically be offered Spring Summer Fall

Other (describe)

Will this be a required or elective course in the curriculum? Required Elective

What is the probable enrollment when offered? Estimate:

UNITS

Indicate number of units:

Indicate no. of contact hours: Lecture Seminar Tutorial Lab Other; explain below

OTHER

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

WQB DESIGNATION

(attach approval from Curriculum Office)

PREREQUISITE AND / OR COREQUISITE



EQUIVALENT COURSES [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

1. SEQUENTIAL COURSE [is not hard coded in the student information management system (SIMS).]

Students who have taken (place relevant course(s) in the blank below (ex: STAT 100)) **first** may not then take this course for further credit.

BUS 329-4

2. ONE-WAY EQUIVALENCY [is not hard coded in SIMS.]

(Place relevant course(s) in the blank below (ex: STAT 100)) will be accepted in lieu of this course.

3. TWO-WAY EQUIVALENCY [is hard coded and enforced by SIMS.]

Students with credit for (place relevant course(s) in the blank below (ex: STAT 100)) may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? YES NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

4. SPECIAL TOPICS PRECLUSION STATEMENT [is not hard coded in SIMS.]

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO

COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)

On successfully completing this course, students will be able to:

- Describe the general structure of the Canadian Income Tax System
- Outline the tax procedures and administration requirements imposed by the Canadian Income Tax Act
- Explain the basic concepts of employment income, business income or loss and property income
- Apply the general provisions of the capital cost allowance system
- Discuss the income tax provisions for computing capital gains and losses on the disposition of capital assets
- Evaluate retirement savings as a source of income
- Identify other major sources of taxable income, deductions and tax credits for individuals
- Determine the net income for tax purpose, taxable income and tax payable for individuals
- Formulate basic tax planning strategies for individuals



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

OTHER IMPLICATIONS

Final exam required YES NO
Criminal Record Check required YES NO

OVERLAP CHECK

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

Name of Originator

Stephen Spector



COURSE SUBJECT NUMBER

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

CAMPUS where course will be normally taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Students will examine the taxation of corporations, corporate distributions, and transactions between corporations and their shareholders. Topics include an in-depth coverage of taxable capital gains; deferred income plans; and the taxation of corporate entities, partnerships, trusts and corporate reorganizations.

REPEAT FOR CREDIT YES NO Total completions allowed Within a term? YES NO

LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit www.lib.sfu.ca/about/overview/collections/course-assessments.

RATIONALE FOR INTRODUCTION OF THIS COURSE

Currently, BUS 329-4 cover Income Tax topics for students interested in pursuing the CPA designation, or just wanting to gain an introduction to Canadian income tax laws and regulations. It is primarily a practical course. By splitting the course into two, we will be able to add more material relating to tax theory and tax policy and make sure that students are able to keep pace with the changes that occur from time to time within the CPA Competency Map.

**SCHEDULING AND ENROLLMENT INFORMATION**Term and year course would first be offered (e.g. FALL 2016) Term in which course will typically be offered Spring Summer FallOther (describe) Will this be a required or elective course in the curriculum? Required Elective What is the probable enrollment when offered? Estimate: **UNITS**Indicate number of units: Indicate no. of contact hours: Lecture Seminar Tutorial Lab Other; explain below**OTHER**

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

WQB DESIGNATION

(attach approval from Curriculum Office)

PREREQUISITE AND / OR COREQUISITE

EQUIVALENT COURSES [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

1. SEQUENTIAL COURSE [is not hard coded in the student information management system (SIMS).]

Students who have taken *(place relevant course(s) in the blank below (ex: STAT 100))* first may not then take this course for further credit.

2. ONE-WAY EQUIVALENCY [is not hard coded in SIMS.]

(Place relevant course(s) in the blank below (ex: STAT 100)) will be accepted in lieu of this course.

3. TWO-WAY EQUIVALENCY [is hard coded and enforced by SIMS.]

Students with credit for *(place relevant course(s) in the blank below (ex: STAT 100))* may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? YES NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

4. SPECIAL TOPICS PRECLUSION STATEMENT [is not hard coded in SIMS.]

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO

COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)

After completing this course, students will be able to accomplish the following:

- Apply the income tax provisions for the determination of gains and losses on the disposition of capital assets
- Evaluate the various deferred income plans available to Canadians and how these plans can be used for retirement, education or general wealth building purposes
- Calculate the net income, taxable income and taxes payable for a corporate entity
- Demonstrate how corporate entities are taxed on their investment income
- Interpret the technical corporate taxation issues involving the acquisition of control, association rules, investment tax credits, paid-up-capital and distribution of corporate surpluses
- Explain how a corporation can be used to reduce taxes, defer taxes, and facilitate income splitting
- Quantify the income of a partnership for tax purposes and allocate this income to partners
- Explain the taxation of the different types of trusts and how they can be successfully used for estate planning purposes
- Identify the major provisions of Section 85 rollovers under the Canadian Income Tax Act and other rollover provisions affecting corporations, partnerships and trusts



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

OTHER IMPLICATIONS

Final exam required YES NO
Criminal Record Check required YES NO

OVERLAP CHECK

Checking for overlap is the responsibility of the Associate Dean.
Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

Name of Originator

Stephen Spector



COURSE SUBJECT BUS

NUMBER 465

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Business Systems Development

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Business Systems Development

CAMPUS where course will be normally taught: Burnaby Surrey Vancouver Great Northern Way Off campus**COURSE DESCRIPTION** — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

This course will focus on the practical application of business technology management knowledge and skills to develop business systems. Students will learn how to apply knowledge from prior MIS courses and develop applications for Internet-enabled businesses. The students targeted are primarily Beedie MIS students who have preferably taken BUS 362 & BUS 464, in which they conceptualize the data and functional requirements for business software. The course will thus deepen skills in process logic, data management, and user interface design in business domains.

REPEAT FOR CREDIT YES NO Total completions allowed Within a term? YES NO**LIBRARY RESOURCES**

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit www.lib.sfu.ca/about/overview/collections/course-assessments.

RATIONALE FOR INTRODUCTION OF THIS COURSE

This course, targeted primarily at Beedie MIS students, focuses on the practical application of business technology management concepts taught in MIS courses. Currently, Beedie does not offer any course in business systems development for undergraduates to apply their MIS knowledge. MIS students mostly take 100 level courses in CMPT do not focus on business systems. Neither are Beedie students required to deepen these skills during the MIS concentration, nor are there specific courses within SFU where they have an opportunity to apply and develop their conceptual designs for business functionality (which is a central component of BUS 362 and BUS 464) into working prototypes. Typical of any design course, a substantial part of learning and skill enhancement will happen when students are applying concepts from prior courses and converting their conceptual software designs into prototypes. This course therefore is a natural progression of the recommended pre-requisites. The pre-requisites may be made mandatory after one or two offerings of this course.

**SCHEDULING AND ENROLLMENT INFORMATION**Term and year course would first be offered (e.g. FALL 2016) **Spring 2018**Term in which course will typically be offered Spring Summer Fall
Other (describe)Will this be a required or elective course in the curriculum? Required Elective 3FRVJSFEGPS#5.What is the probable enrollment when offered? Estimate: **25 per term****UNITS**Indicate number of units: **3**Indicate no. of contact hours: Lecture **3** Seminar Tutorial Lab Other; explain below**OTHER****FACULTY**

Which of your present CFL faculty have the expertise to offer this course?

Nilesh Saraf, Kamal Masri, Michael Brydon, JM Goh**WQB DESIGNATION**

(attach approval from Curriculum Office)

PREREQUISITE AND / OR COREQUISITE

Prerequisite: BUS 360W, Recommend BUS 362/464/CMPT 354



EQUIVALENT COURSES [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

1. SEQUENTIAL COURSE [is not hard coded in the student information management system (SIMS).]

Students who have taken (*place relevant course(s) in the blank below (ex: STAT 100)*) **first** may not then take this course for further credit.

2. ONE-WAY EQUIVALENCY [is not hard coded in SIMS.]

(*Place relevant course(s) in the blank below (ex: STAT 100)*) will be accepted in lieu of this course.

3. TWO-WAY EQUIVALENCY [is hard coded and enforced by SIMS.]

Students with credit for (*place relevant course(s) in the blank below (ex: STAT 100)*) may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? YES NO
Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

4. SPECIAL TOPICS PRECLUSION STATEMENT [is not hard coded in SIMS.]

This course is equivalent to BUS 492 (Summer 2017).

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO

COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)

On successfully completing this course, students will be able to:

- Apply business technology management concepts
- Assess feasibility of information systems requirements for businesses
- Assess the quality of information systems for businesses
- Develop alternative information systems solutions for adapting business processes
- Acquire skills in developing business systems
- Implement Internet-enabled business system
- Acquire collaboration skills specific to business software development



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc.:

None.

OTHER IMPLICATIONS

Final exam required YES NO

Criminal Record Check required YES NO

OVERLAP CHECK

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

Name of Originator

Nilesh Saraf



COURSE SUBJECT MBB

NUMBER

302

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Energy: From Cells to Society

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Energy: From Cells to Society

CAMPUS where course will be normally taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Energy sustains life, from early cells, through molecular machines and ecosystems, to industrial society. Social issues, such as the search for extraterrestrial life, obesity, death and climate change will provide context for understanding the science of energy.

REPEAT FOR CREDIT YES NO Total completions allowed _____ Within a term? YES NO

LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit www.lib.sfu.ca/about/overview/collections/course-assessments.

RATIONALE FOR INTRODUCTION OF THIS COURSE

The yawning divide between the human enterprise and nature is nowhere more apparent than in our relationship to energy. This wide-ranging science breadth course, grounded in biochemistry and enriched by contributions from other science disciplines, will use energy as a thread to show the deep connections between cellular life and life in our complex industrial society. It will provide non-science students with an opportunity to experience nature on a level normal reserved for practicing scientists. Science students taking this course as an elective will see science in the broader context of important societal issues.



SCHEDULING AND ENROLLMENT INFORMATION

Term and year course would first be offered (e.g. FALL 2016) **summer 2018**

Term in which course will typically be offered Spring Summer Fall

Other (*describe*)

Will this be a required or elective course in the curriculum? Required Elective

What is the probable enrollment when offered? Estimate: **100**

UNITS

Indicate number of units: **three**

Indicate no. of contact hours: Lecture Seminar Tutorial Lab **4** Other; explain below

OTHER

The approach of the course will be team-based learning

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

Dr. Lynne Quarmby

WQB DESIGNATION

(attach approval from Curriculum Office)

please see attached

PREREQUISITE AND / OR COREQUISITE

pre-requisite of 45 units



EQUIVALENT COURSES [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

1. SEQUENTIAL COURSE [is not hard coded in the student information management system (SIMS).]

Students who have taken *(place relevant course(s) in the blank below (ex: STAT 100))* **first** may not then take this course for further credit.

2. ONE-WAY EQUIVALENCY [is not hard coded in SIMS.]

(Place relevant course(s) in the blank below (ex: STAT 100)) will be accepted in lieu of this course.

3. TWO-WAY EQUIVALENCY [is hard coded and enforced by SIMS.]

Students with credit for *(place relevant course(s) in the blank below (ex: STAT 100))* may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency? YES NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

4. SPECIAL TOPICS PRECLUSION STATEMENT [is not hard coded in SIMS.]

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO

COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

OTHER IMPLICATIONS

Final exam required YES NO

Criminal Record Check required YES NO

OVERLAP CHECK

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

Name of Originator

Ingrid Northwood



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MEMORANDUM

ATTENTION Carl Lowenberger, Associate Dean,
Faculty of Science

DATE March 28, 2017

FROM Susan Rhodes, Director
University Curriculum & Institutional Liaison

PAGES 1

RE: MBB Breadth designation approval

The University Curriculum Office has reviewed and approved **B-Sci** designation for the following proposed Molecular Biology and Biochemistry course, effective Summer 2018 (1184):

MBB 302-3 Energy: From Cells to Society

Please forward this memo to your Faculty UCC and then on to SCUS and Senate for further approval.

cc: Ingrid Northwood, Undergraduate Program Coordinator, Molecular Biology and Biochemistry