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**MEMORANDUM** \_\_\_\_\_

**ATTENTION** Senate      **DATE** March 7, 2025  
**FROM** Paul Kingsbury, Vice-Chair      **PAGES** 1/2  
**Senate Committee on Undergraduate Studies**  
**RE:** New Course Proposals


**For information:**

Acting under delegated authority at its meeting of March 6, 2025 SCUS approved the following curriculum revisions effective Fall 2025.

**a. Faculty of Applied Sciences****1. School of Engineering Science (SCUS 25-45) (Spring 2026)**

(i) New Course Proposal: ENSC 414-4, Synthetic Aperture Radar; Backscatter and Interferometry Applications

**2. School of Sustainable Energy Engineering (SCUS 25-46)**

(i) New Course Proposal: SEE-466-3, Renewable Energy Systems and Distributed Generation

**b. Faculty of Arts and Social Sciences****1. Departments of Economics, Linguistics, Philosophy, and Political Science (SCUS 25-48)**

(i) New Course Proposal: SDA 100-3, Data Visualization

**2. Urban Studies Program (SCUS 25-49)**

(i) New Course Proposal: URB 467-4, Housing Studies

**c. Faculty of Environment**

1. Department of Archaeology (SCUS 25-30)

- (i) New Course Proposal: ARCH 483-3-6, Ancient and Forensic DNA Lab Project

**d. Faculty of Science**

1. Department of Chemistry

- (i) New Course Proposal: CHEM 115-1, Introductory Chemistry Laboratory (SCUS 25-50)

- (ii) New Course Proposals: (SCUS 25-51)

- NUSC 481-5, Undergraduate Research in Nuclear Science
- NUSC 484-10, Two-Term Undergraduate Research in Nuclear Science

2. Dean of Science Office

- (i) New Course Proposals: (SCUS 25-52)

- SCI 130-3, Busting Science Myths: Critical Thinking in the Misinformation Age
- SCI 140-3, Genes Unzipped: The Science and Secrets of DNA

Senators wishing to consult a more detailed report of curriculum revisions may do so on the Senate Docushare repository at <https://docushare.sfu.ca/dsweb/View/Collection-12682>.

COURSE SUBJECT ENSC

NUMBER 414

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

Synthetic Aperture Radar; Backscatter and Interferometry Applications

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

SAR and InSAR Applications

**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.

Principles of Synthetic Aperture Radar (SAR) and Interferometric SAR (InSAR) Remote Sensing and its Applications. Overview of basic theory, linking SAR with related coherent imaging techniques (e.g. optical holography). Understanding capabilities and limitations of complex SAR data and their key land and marine applications. Main focus is on InSAR methods and their Earth science monitoring and detection applications.

**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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

Spaceborne and airborne Synthetic Aperture Radar (SAR) are complex engineering systems with growing importance (particular SAR satellite platforms are steeply increasing in numbers with many new systems being planned or already been launched and operated by both national and private entities) and a multitude of powerful applications for earth observation monitoring applications (urban and industrial infrastructure integrity, natural hazards, agriculture, met-cocean observations, and maritime security) . It is important for engineering students to understand the basics of SAR, including how it relates to that behind other coherent imaging and tomographic techniques used by various engineering systems (e.g. optical holography, MRI, e.g. sonar/ultrasound) as well as its key applications, including relevant sensor design and signal formation; basic and advanced SAR and InSAR data processing methods, Knowledge gained in the course will allow students to assess the feasibility of existing and new applications and test new data processing methods of SAR and InSAR, and understand the challenges around their design for concrete cases they may encounter in their later careers. The course teaches SAR/InSAR “techniques and applications as a component to be used in various engineering systems.

## SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) **SPRING 2026**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  ElectiveWhat is the probable enrollment when offered? Estimate: **25**

## UNITS

Indicate number of units: **4**Indicate no. of contact hours: **39** Lecture **13** Seminar **13** Tutorial **13** Lab **13** Other; explain below

## OTHER

## FACULTY

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

**Bernhard Rabus, (Rodney Vaughn), (Faisal Beg)**

## WQB DESIGNATION

(attach approval from Curriculum Office)

## PREREQUISITE AND / OR COREQUISITE

**MATH 251, ENSC 316 and permission by instructor**

**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.

**ENSC 812 Synthetic Aperture Radar; Backscatter and Interferometry Applications**

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.]

ENSC 461 Special Topics in Engineering Science with title 'ST-Synth.Aperture Radar Applic'

ENSC 895 Special Topics III with title 'ST-Synth.Aperture Radar Applic'

**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, the students should:

- Understand key concepts, as well as potential, and constraints of SAR interferometry and its applications
- Understand the terminology and be able to follow the literature in the field, including the relation of InSAR techniques to those in other engineering areas where coherent imaging is employed.
- Be able to evaluate feasibility of application design problems involving InSAR, implement an application in the relevant software (currently, the course examples use python based environments and SAR processing software provided by CSA and ESA)

**RESOURCES**

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

Computer lab access (ssh to SARlab server) for labs and term project

**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**

Bernhard Rabus

COURSE SUBJECT SEE

NUMBER 466

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

Renewable Energy Systems and Distributed Generation

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

Renewables

**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.

Renewable energy systems and their grid integration technologies, including wind, solar, tidal, and hydro energy conversion systems, along with the economics of distributed generation. Some of these systems are studied in greater detail through experiments, a field trip, and the course project.

**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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).**RATIONALE FOR INTRODUCTION OF THIS COURSE**

The course has been offered three times in a row as a special topics course in SEE, consistently attracting a strong enrollment of over 20 students each time. The SEE student society has also repeatedly requested that it be made a core or permanent course within the SEE curriculum. Given the expected continued demand, it is reasonable to create a dedicated course for this topic.

## SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) **Fall 2025**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  ElectiveWhat is the probable enrollment when offered? Estimate: **20**

## UNITS

Indicate number of units: **3**Indicate no. of contact hours: **39** Lecture **8** Seminar **12** Tutorial **12** Lab  Other; explain below

## OTHER

## FACULTY

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

**Mahda Jahromi**

## WQB DESIGNATION

(attach approval from Curriculum Office)

## PREREQUISITE AND / OR COREQUISITE

Prerequisite: SEE 251

**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.

N/A

**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.

N/A

**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.

N/A

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.]

Students with credit for SEE 476 under the title Renewable Energy Systems may not take this course for further credit.

**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**

COURSE SUBJECT SDA

NUMBER 100

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

Data Visualization

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

Data Visualization

**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.

Introduces the principles and tools of data visualization and visual storytelling with R. Learn foundational and advanced plotting techniques to create impactful visuals and interactive dashboards, transforming raw data into compelling data-driven stories for diverse audiences.

**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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

The SDA Minor currently requires a data visualization course, but the courses that fulfill this requirement are at the upper division. Further, they are offered by three different departments (ECON, POL, and STATS)—all with different prerequisites. This makes it difficult for students outside of these disciplines to access these courses. Further, because they are at the upper division where students often have already taken some sort of course with statistical analysis, more advanced topics are covered.

The rationale for this course is that data visualization and presentation are foundational skills. They should be learned at the start of a student's journey into data-driven analysis and science, and the course should be open to all students without prerequisites. Introducing this course accomplishes these goals.

## SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) **Fall 2025**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  ElectiveWhat is the probable enrollment when offered? Estimate: **50**

## UNITS

Indicate number of units: **3**Indicate no. of contact hours: **2** Lecture **1** Seminar **1** Tutorial **1** Lab **1** Other; explain below

## OTHER

## FACULTY

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

Steven Weldon and Edana Beauvais (Political Science); Simon Woodcock and Kevin Schnepel (Economics); Derek Bingham, Becky Lin, David Stenning, and Sonja Surjanovic (Statistics and Actuarial Science)

## WQB DESIGNATION

(attach approval from Curriculum Office)

## PREREQUISITE AND / OR COREQUISITE

**NA**

**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.

ECON 334, POL 390, STAT 240, STAT 310

**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)**

1. Understand the core principles of effective data visualization and data storytelling.
2. Use R to create a variety of static data visualizations.
3. Implement basic data transformation techniques to prepare for data visualization.
4. Build interactive plots and basic dashboards in RStudio.
5. Create basic geospatial visualizations.
6. Critique, refine, and present visualizations for clarity and impact.

**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**

Steven Weldon

COURSE SUBJECT URB

NUMBER 467

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

Housing Studies

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

Housing Studies

**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.

Introduces students to variety of theoretical approaches to researching housing phenomena and experiences.

**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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

This course was offered as a special topic graduate course since Summer 2023. This course complements URB 665 Urban Housing Policy with a theory focus and international coverage. We propose cross listing URB 467 with URB 667 and adding URB 467 as an option within the BA Urban Worlds Major to enrich and diversify the undergraduate curriculum. This cross-listing will offer advanced undergraduates the opportunity to engage with a specialized topic and gain exposure to the dynamic learning environment of Urban Studies graduate courses.

## SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) **Fall 2025**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  ElectiveWhat is the probable enrollment when offered? Estimate: **20 in total; 10 undergraduates**

## UNITS

Indicate number of units: **4**Indicate no. of contact hours: **1** Lecture **3** Seminar **0** Tutorial **0** Lab **0** Other; explain below

## OTHER

## FACULTY

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

**Yushu Zhu; Andy Yan**

## WQB DESIGNATION

(attach approval from Curriculum Office)

## PREREQUISITE AND / OR COREQUISITE

**30 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.

URB 667 (the course will be regularized from a special topic course, it is currently in development)

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.]

Students with credit for URB 695 with the topic of “Debates in Housing Theory” may not take this course for further credit.

**FEES**

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

**COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)**

- Introduce students to a range of theoretical perspectives on housing and community issues.
- Explore different disciplinary approaches to housing studies.
- Examine the political and social implications of different approaches to housing research.
- Equip students with the skills and knowledge necessary to conduct independent research on housing topics.

**RESOURCES**

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

NA

**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**

Yushu Zhu

## COURSE SUBJECT

ARCH

## NUMBER

483

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

Ancient and Forensic DNA Lab Project

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

Ancient and Forensic DNA Lab

**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.

Ancient DNA and forensic DNA are becoming increasingly important in today's archaeological research and forensic investigations. This lab practicum provides students a hands-on experience to learn essential lab skills to extract and analyze trace amounts of ancient DNA or degraded forensic DNA while executing vigorous contamination controls.

## 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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

## RATIONALE FOR INTRODUCTION OF THIS COURSE

Ancient DNA and forensic DNA are becoming increasingly important in today's archaeological research and forensic investigations. Students who wish to pursue graduate studies and a career in archaeology and forensics would benefit from hands-on lab skills training course.

This undergraduate course is derived from one faculty member's (Dr. Yang's) graduate training program (running for over 20 years) for his new graduate students in the Ancient DNA Lab in the Department of Archaeology at SFU.

In Fall 2023, we made the training program available to three senior undergraduate students via "Arch 480, Directed Lab Research". In Fall 2024, we took on four senior undergraduate students via "Arch 436, Biological Anthropology Field Practicum".

The positive feedback and outcomes from these two training experiments have led us to believe that we are now ready to invite more students to participate in this lab-based course. This would benefit many undergraduate students at SFU and enhance the Department's reputation for its lab-based education. A new course code would promote this opportunity to more students.

This upper-level lab-based course will take advantage of ancient DNA research expertise in the Department for recovering and analyzing trace amounts of DNA, and the existence of dedicated ancient DNA facilities for contamination controls and prevention.

To the best of our knowledge, this will be the first ancient DNA skills training course in Canada.

## SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) **Fall 2025**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  ElectiveWhat is the probable enrollment when offered? Estimate: **10-12**

## UNITS

Indicate number of units: **3-6**Indicate no. of contact hours: **1** Lecture **1** Seminar **1** Tutorial **3-4** Lab **1** Other; explain below

## OTHER

## FACULTY

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

- Dr. Dongya Yang, his research is focused on ancient and forensic DNA. He has been running a dedicated Ancient DNA Lab at SFU for 25 years.
- Dr. Casey Kirkpatrick (starting in Jan 2025) with research experience in ancient DNA.
- Others like postdoctoral fellows of the Ancient DNA Lab may step in to teach as well.

## WQB DESIGNATION

(attach approval from Curriculum Office)

## PREREQUISITE AND / OR COREQUISITE

**Arch 383 Ancient and Forensic DNA**  
or Approval by the Instructor after the interview

**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:

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**

Dongya Yang

COURSE SUBJECT CHEM

NUMBER 115

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

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

**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.

Laboratory component that builds upon the concepts covered in Chemistry 110. Designed for students with limited or no background in chemistry, the laboratory environment allows students to put fundamental concepts into practice. Laboratory skills include safety, handling chemicals, and studying chemical reactions and their products. No previous training in chemistry is required for this course.

**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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

#### RATIONALE FOR INTRODUCTION OF THIS COURSE

This introductory laboratory course is equivalent to the already-existing and already-offered laboratory portion of CHEM 111, which is a single lecture/laboratory course; the lecture component is CHEM 110. Students should take CHEM 110/115 concurrently in order to be equivalent to CHEM 111. This separation of lecture/lab components into two courses allows for student flexibility in terms of when they are able to take the lecture and lab, as well as gives students who have only taken CHEM110 the ability to complete the CHEM121 pre-requisites by taking CHEM115 instead of the 4 credit CHEM111.

**SCHEDULING AND ENROLLMENT INFORMATION**

Effective term and year (e.g. FALL 2016) Fall 2025

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: 1

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

**OTHER**

One 3-4 hour laboratory session, biweekly.

**FACULTY**

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

This new course is equivalent to the currently already offered laboratory portion of CHEM 111 and has been taught regularly by multiple faculty members (e.g. Canal, Goyan, Mund).

**WQB DESIGNATION**

(attach approval from Curriculum Office)

**PREREQUISITE AND / OR COREQUISITE**

Prerequisite: Pre-Calculus 12 (or equivalent), MATH 100 or MATH 110 (either may be taken concurrently), or permission of the department. Corequisite: CHEM 110

**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.

Students who have taken CHEM 111 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:

None. This course is already offered as the laboratory component of CHEM 111 and thus all resources are in place.

**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**

Patty Somers, Chemistry Undergraduate Studies Chair

COURSE SUBJECT NUSC

NUMBER 481

**COURSE TITLE LONG** — for Calendar/schedule, no more than 100 characters including spaces and punctuation  
Undergraduate Research in Nuclear Science

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

**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.

Experimental and/or theoretical research; preparation of a written report and oral presentation in research seminar format. Admission requires selection of a faculty supervisor and submission of a research proposal. Prospective students must contact the chemistry advisor to register their interest in this course before the last day of classes of the previous term. The research proposal is due by the end of the examination period preceding the research term +

**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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

#### RATIONALE FOR INTRODUCTION OF THIS COURSE

Introduction of this course allows for students to use undergraduate research credits towards their Nuclear Science Minor.

**SCHEDULING AND ENROLLMENT INFORMATION**

Effective term and year (e.g. FALL 2016) Fall 2025

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: 5

**UNITS**

Indicate number of units: 5

Indicate no. of contact hours: Lecture Seminar Tutorial Lab 12-15 Other; explain below

**OTHER**

Student will conduct an independent research project in the research laboratory of a faculty member.

**FACULTY**

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

Drs Starosta, Ramogida, Andreoiu

**WQB DESIGNATION**

(attach approval from Curriculum Office)

**PREREQUISITE AND / OR COREQUISITE**

Prerequisite: Permission of the Department; knowledge of nuclear science at an advanced level. Normally taken after completion of 300-level course requirements.

**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.

Students who have taken NUSC 484 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:

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**

Patty Somers, Chemistry Undergraduate Studies Chair

COURSE SUBJECT NUSC

NUMBER 484

**COURSE TITLE LONG** — for Calendar/schedule, no more than 100 characters including spaces and punctuation  
Two-Term Undergraduate Research in Nuclear Science

**COURSE TITLE SHORT** — for enrollment/transcript, no more than 30 characters including spaces and punctuation  
Two-Term UG Research

**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.

Experimental and/or theoretical research; preparation of a written report and oral presentation in research seminar format. Admission requires selection of a faculty supervisor and submission of a research proposal. Prospective students must contact the chemistry advisor to register their interest in this course before the last day of classes of the previous term. The research proposal is due by the end of the examination period preceding the research term +

**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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

#### RATIONALE FOR INTRODUCTION OF THIS COURSE

Introduction of this course allows for students to use undergraduate research credits towards their Nuclear Science Minor.

**SCHEDULING AND ENROLLMENT INFORMATION**

Effective term and year (e.g. FALL 2016) Fall 2025

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: 5

**UNITS**

Indicate number of units: 10

Indicate no. of contact hours: Lecture Seminar Tutorial Lab 12-15 Other; explain below

**OTHER**

IND - Student will conduct an independent research project in the research laboratory of a faculty member.

**FACULTY**

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

Drs Starosta, Ramogida, Andreoiu

**WQB DESIGNATION**

(attach approval from Curriculum Office)

**PREREQUISITE AND / OR COREQUISITE**

Prerequisite: Permission of the Department; knowledge of nuclear science at an advanced level. Normally taken after completion of 300-level course requirements.

**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.

Students with credit for CHEM 484 or (CHEM 481 and 483) 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:

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**

Patty Somers, Chemistry Undergraduate Studies Chair

COURSE SUBJECT SCI

NUMBER 130

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

Busting Science Myths: Critical Thinking in the Misinformation Age

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

Busting Science Myths

**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.

Are vaccines dangerous? Is global warming real? Why is science so controversial? Unravel the truth through lively discussions and critical analysis. Sharpen your skills to separate fact from fiction and make informed choices—whether shaping public policy or navigating everyday life.

**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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).**RATIONALE FOR INTRODUCTION OF THIS COURSE**

This course provides a much-needed foundation of scientific literacy, to help students from all faculties understand the process and practice of science, critically evaluate information sources and. No science background is needed for this course, to make it accessible for all students.

It provides foundational concepts, such as: What is an atom? What are forever chemicals? How do vaccines work? It will guide development of tools and skills to help students navigate the "post-factual" era: What is a reliable source of information? How does peer-review work? How can I identify a misleading graph? It will help them make informed decisions spanning health care and climate policy to choice of foods, uptake of vaccines etc.

There are three lecture hours per week. The first provides sufficient basic science to understand a particular controversy. The second explores the controversy in more depth, including sources of the information, examination of the relevant data, etc. The third hour will be devoted to activities for the students in which they discuss or debate the topic. Students will also complete a final project, in which they make a short video describing/analyzing a controversy of their choice aimed at communication with people lacking a strong science background.

## SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) **Fall 2025**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  ElectiveWhat is the probable enrollment when offered? Estimate: **250**

## UNITS

Indicate number of units: **3**Indicate no. of contact hours: **3** Lecture **0** Seminar **0** Tutorial **0** Lab **0** Other; explain below

## OTHER

## FACULTY

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

This course is designed such that most faculty in BISC, BPK or MBB could teach it. The intention is that faculty from all departments in the Faculty of Science could teach it.

## WQB DESIGNATION

(attach approval from Curriculum Office)

Breadth-Sci

## PREREQUISITE AND / OR COREQUISITE

N/A

**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.

N/A

**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.

N/A

**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.

N/A

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.]

N/A

**FEES**

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

**COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)**

1. Explain scientific concepts relevant to recent and topical issues in modern society.
2. Interpret scientific data in a variety of formats.
  - a. Interpret graphical data from different graph types
  - b. Interpret numerical and basic statistical data
  - c. Contextualize numerical values, including very large and very small numbers
3. Appraise the validity of sources of scientific information
  - a. Describe the scientific method
  - b. Describe the process of scientific publishing including peer review
  - c. Describe the basic methodology of a clinical trial
  - d. Explain the utility of statistics for interpreting information
4. Critically evaluate scientific information from diverse sources
  - a. Identify biased communication tactics
  - b. Identify misinformation
  - c. Explain the difference between correlation and causation
  - d. Relate new information to an existing knowledge framework
  - e. Articulate a well-balanced and logical scientific argument

**RESOURCES**

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

N/A

**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**

Dr. Kathleen Fitzpatrick, BISC

COURSE SUBJECT SCI

NUMBER 140

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

Genes Unzipped: The Science and Secrets of DNA

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

Genes Unzipped: The Science and Secrets of DNA

**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.

Explore how DNA shapes your life, identity, and the future. Learn how DNA is the basis of ancestry tests, paternity testing and forensic science, can be manipulated for the creation of genetically modified organisms (GMOs) and could be used to clone pets.

**REPEAT FOR CREDIT** YES NO

Total completions allowed

One

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](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

The understanding of basic science is of the utmost importance in today's society. In an effort to share evidence-based research to non-science majors, members from the Faculty of Science have come together to develop this new breadth science course. SCI 140 will introduce students to the fundamental concepts of DNA, the molecule that carries genetic information in all living organisms. Designed for those without a science background, the foundational knowledge taught in this course will help students understand the role of DNA in various aspects of life, including personal identity and health.

By examining real-world applications such as genetic testing, personalized medicine, and forensic science, students will see how scientific discoveries have led to practical solutions that impact society. The course will also discuss the application of genetic research, encouraging students to think critically about the implications of scientific advancements.

Through engaging activities and discussions, SCI 140 will foster an appreciation for how science enhances our understanding of the world and empowers us to make informed decisions about our health, personal identity, and future.

## SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) **FALL 2025**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  ElectiveWhat is the probable enrollment when offered? Estimate: **60 - 100**

## UNITS

Indicate number of units: **3**Indicate no. of contact hours: **3** Lecture  Seminar  Tutorial  Lab  Other; explain below

## OTHER

## FACULTY

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

**Nadine Wicks, Irina Kovalyova, Stephanie Vlachos, Nancy Hawkins, Edgar Young (any faculty member in MBB will be able to teach this course)**

## WQB DESIGNATION

(attach approval from Curriculum Office)

**Submitting for approval at March SCUS Meeting**

## PREREQUISITE AND / OR COREQUISITE

None

**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.

N/A

**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.

N/A

**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.

N/A

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:

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**

Nadine Wicks, Irina Kovalyova, Stephanie Vlachos