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MEMORANDUM

ATTENTION:	Senate
FROM:	Elizabeth Elle, Vice-Chair, Senate Committee on Undergraduate Studies
RE:	Program Changes
DATE:	February 3, 2023

For information:

Acting under delegated authority at its meeting of February 2, 2023, SCUS approved the following curriculum revisions effective Fall 2023.

a. Faculty of Applied Sciences *(SCUS 23-18)*

1. School of Computing Science

(i) Requirement changes to the:
- Computing Science Major
- Computing Science Honours
- Computing Science Dual Degree Program
- Computing Science Second Degree
- Computing Science and Linguistics Joint Major
- Information Systems in Business Administration and Computing Science Joint Major
- Computing Science Minor
- Computing Studies Certificate

b. Beedie School of Business *(SCUS 23-19)*

(i) Program requirement changes to the Molecular Biology and Biochemistry and Business Administration Joint Honours
(ii) Requirement changes to the Corporate Environmental and Social Sustainability Certificate

c. Faculty of Communication, Art and Technology *(SCUS 23-20)*

1. School for the Contemporary Arts

(i) Requirement changes to the:
- Theatre (Production and Design Stream) Major
- Theatre (Production and Design Stream) Honours
- Theatre Extended Minor

2. School of Interactive Arts and Technology ***(SCUS 23-10)***

(i) Upper division requirement changes to the:

- Interactive Arts and Technology Major BA
- Interactive Arts and Technology Second Degree BA
- Interactive Arts and Technology Major BSc
- Interactive Arts and Technology Second Degree BSc
- Interactive Arts and Technology Honours BA
- Interactive Arts and Technology Honours BSc
- Interactive Arts and Technology and Business Joint Major BSc
- Interactive Arts and Technology and Business Joint Major BA or BBA
- Communication and Interactive Arts and Technology Joint Major BA
- Communication and Interactive Arts and Technology Joint Major BSc

d. Faculty of Environment *(SCUS 23-21)*

1. School of Resource and Environmental Management

(i) Upper division requirement changes to the:

- Resource and Environmental Management Major
- Resource and Environmental Management Honours

e. Faculty of Science *(SCUS 23-22)*

1. Department of Earth Sciences ***(SCUS 23-13)***

(i) Upper and lower division requirement changes to the:

- Earth Sciences Major
- Earth Sciences Honours

2. Department of Molecular Biology and Biochemistry

(i) Upper division requirement changes to the:

- Molecular Biology and Biochemistry Major
- Molecular Biology and Biochemistry Honours

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.

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

PROGRAM MODIFICATION TEMPLATE

Calendar Entry Change
Faculty of Applied Sciences – School of Computing Science

Rationale for change: Modernization of concentration and course naming, strategic alignment with new Visual and Interactive Computing Institute (VINCI), harmonization of computer vision courses to align with graduate program areas, removal of CMPT 414 (no longer offered)
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Computing Science Bachelor of Science or Bachelor of Arts; Computing Science Bachelor of Science or Bachelor of Arts (Honours); Computing Science Dual Degree Program Bachelor of Science; Computing Science Second Degree Bachelor of Science or Bachelor of Arts; Computing Science and Linguistics Bachelor of Arts or Bachelor of Science (Joint Major); Information Systems in Business Administration and Computing Science Bachelor of Business Administration or Bachelor of Science (Joint Major); Computing Science Minor; Computing Studies Certificate

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

ARTIFICIAL INTELLIGENCE CMPT 310 - Introduction to Artificial Intelligence (3) CMPT 340 - Biomedical Computing (3) CMPT 410 - Machine Learning (3) CMPT 411 - Knowledge Representation (3) ~~CMPT 412 - Computational Vision (3)~~ CMPT 413 - Computational Linguistics (3) ~~CMPT 414 - Model-Based Computer Vision (3)~~ CMPT 417 - Intelligent Systems (3) CMPT 419 - Special Topics in Artificial Intelligence (3) CMPT 420 - Deep Learning (3) ~~COMPUTER GRAPHICS AND MULTIMEDIA~~ **VISUAL AND INTERACTIVE COMPUTING** CMPT 361 - Introduction to ~~Computer Graphics~~ **Visual Computing** (3) CMPT 363 - User Interface Design (3)

CMPT 365 - Multimedia Systems (3)
CMPT 412 - Computer Vision (3)
CMPT 461 - Computational Photography and Image Manipulation (3)
CMPT 464 - Geometric Modelling in Computer Graphics (3)
CMPT 466 - Animation (3)
CMPT 467 - Visualization (3)
CMPT 469 - Special Topics in Computer Graphics (3)

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

PROGRAM MODIFICATION TEMPLATE

Name of Program or Name of Faculty Beedie School of Business
Rationale for change: Most programs are removing unit calculations as they are difficulty to track to ensure they are accurate due to curriculum changes across programs across SFU. To reduce confusion and unclarity for students the unit calculation is being removed.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Molecular Biology and Biochemistry and Business Administration Joint Honours

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Molecular Biology and Biochemistry and Business Administration Joint Honours

Beedie School of Business Admission Requirements

Students who wish to pursue the joint honours program must first be admitted to the joint major program. Upon completion of nine upper division business units at SFU, students may apply for admission to the joint honours program.

Grade Requirements

For entry and continuance, the following grade point averages will be used for the Beedie School of Business:

minimum 3.00 cumulative grade point average
minimum 3.00 cumulative upper division grade point average
minimum 3.00 grade point average for upper division BUS courses

minimum 3.00 cumulative grade point average on all BUS courses

For graduation, students must also meet the required minimum GPAs in accordance with the University and both the Beedie School of Business and Molecular Biology and Biochemistry. This includes achieving a minimum cumulative grade point average of 3.0, and an upper division grade point average of 3.0.

Course Access

In addition to normal university grade point average requirements, the Beedie School of Business requires a minimum 2.30 overall SFU Business course grade point average for entry into all 300 and 400 division business courses.

For a course to be accepted as fulfilling a prerequisite, or for a lower division requirement, or for a core course to be accepted in a student's program in business, a student must have obtained a minimum grade of C- (C minus).

Program Requirements

~~The program requires a total of 132-133 units, including 70-72 units in MBB-related courses and 53-54 units in BUS-related courses, with little curriculum scheduling flexibility.~~

Lower Division Requirements

[...]

Name of Program or Name of Faculty Beedie School of Business
Rationale for change: In Fall 2022 a new core course, BUS 275 Business in a Sustainable Society, was approved and added to the BBA to support the responsibility pillar of our vision and provides the foundation for our responsibility learning goal. In Fall 2023 it becomes a core requirement to the BBA, and as it aligns to the learning objectives of the certificate, it makes sense to include here as well. Note: This creates no new obligations/barriers for students and has no implications for other faculties.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Corporate Environmental and Social Sustainability – Certificate

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Corporate Environmental and Social Sustainability

CERTIFICATE

Limitations

This certificate is available to students in a business major, joint major, honours, or joint honours program and to students in a bachelor of environment program.

Students may complete either the certificate in corporate environmental and social sustainability or the sustainable business joint major program, but not both the certificate and the joint major program.

Grade Requirements

In addition to normal university grade point average requirements, the Beedie School of Business requires a minimum 2.30 overall SFU Business course grade point average for entry into all 300 and 400 division business courses.

For a course to be accepted as fulfilling a prerequisite, or for a lower division requirement, or for a core course to be accepted in a student's program in business, a student must have obtained a minimum grade of C- (C minus).

A minimum grade point average of 2.00 calculated on all courses applied towards the certificate is required for graduation from a business certificate.

Program Requirements

Students complete a minimum total of ~~24~~ **27** units~~. by completing one of each pair~~*

Core Courses

BUS 275 – Business in a Sustainable Society (3)
BUS 303 - Business, Society and Ethics (3) or REM 320W - Ethics and the Environment (3)
BUS 393 - Commercial Law (3) or REM 319 - Environmental and Planning Law (3)
EVSC 100 - Introduction to Environmental Science (3) or GEOG 111 - Earth Systems (3)

and one of

GEOG 100 - Our World: Introducing Human Geography (3)
REM 100 - Global Change (3)

and two of*

BUS 449 - Ethical Issues in Marketing (3)
BUS 453 - Sustainable Innovation (3)
BUS 475 - Sustainable Operations (3)
BUS 489 - Management Practices for Sustainability (3)

*Enrollment in upper division business administration courses required for this certificate are open only to approved BBA students or Faculty of Environment students who are enrolled in this certificate.

and a minimum of two of the following non-Business elective courses**

ARCH 386 - Archaeological Resource Management (3)
CMNS 349 - Environment, Media and Communication (4)

ENSC 412 - Technologies, Cultures and a Sustainable World (3) or SD 412 - Technologies, Cultures and a Sustainable World (3)
GEOG 221 - Economic Worlds (3)
GEOG 321 - Geographies of Global Capitalism (4)
GEOG 325 - Geographies of Consumption (4)
PHYS 346 - Energy and the Environment (3)
POL 452W - Energy Policy (4)
REM 350 - Energy Management for a Sustainable Climate and Society (4)
REM 412 - Environmental Modeling (4)
SD 281 - Introduction to Sustainability (3)
SD 381 - Building Sustainable Communities (4)
SD 401 - Sustainable Development Studio (4)

**Substitutions with appropriate course content may be possible with permission from the Beedie School of Business.

and completion of a minimum of one of the following approved experiential or service learning components

co-operative education work term focused on areas related to corporate environmental and social sustainability
25 hours minimum of voluntary or salaried work within a social enterprise, charitable organization, company, corporation, or non-profit organization in a role related to corporate environmental and social sustainability
25 hours minimum as a research assistant for a professor focusing on areas related to corporate environmental and social sustainability
25 hours minimum in other Business Faculty-approved activity areas related to corporate environmental and social sustainability

Before beginning this requirement, it is recommended that students seek prior approval from the Beedie School of Business' ~~Academic Director - Business Major~~ **Area Coordinator of Business & Society** by submitting a detailed outline of their activity.

Upon completion of the experiential component, students will submit to the ~~Academic Director - Business Major~~ **Area Coordinator of Business & Society**:

a description (written by either the student or the organization) of the organization and the student's role in the organization, signed and validated by the employer/supervisor
a reflective 500 word essay about the student's work/volunteer experience that identifies key corporate environmental and social sustainability experiences and how that influenced their current thinking about the implications of business practice on society and the environment. The essay will be graded pass/fail.

Name of Program or Name of Faculty
School for the Contemporary Arts

Rationale for change:

- Calendar description change to align with changes in Theatre & Performance.
- Adding CA174 brings the proposed new courses into the requirements for the major.
- Adding CA143, CA247, and CA449 strengthens our new shared faculty appointment with Music and Sound through shared curriculum and pro vides much needed training in this discipline for our students.
- CA149 is no longer needed with the inclusion of CA143. Removing these units allows for the requirement of CA143.
- Moving CA150 from requirement to "One of" allows for the requirement of CA247. It also creates consistency within the requirement for student's to take another disciplinary first year class.
- Removing CA171 brings our requirements in better alignment with our new faculty's area of expertise and the design focus of our curriculum. Removing these units allows for the requirement of CA174.
- Removing courses that are withdrawn from the Theatre & Production area.
- Allowing students to choose a first-year class in Theatre & Performance, Dance, or Visual Art will free up units for elective courses such as the proposed special temporary topics course CA276.

Effective term and year:

Fall 2023

The following program(s) will be affected by these changes:

Theatre (Production and Design Stream) Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Theatre (Production and Design Stream) Major

BACHELOR OF FINE ARTS

~~Theatre~~ **S**tudents **interested in developing live performance environments** may choose ~~a performance stream or a~~ **the** production and design stream **within Theatre and Performance which will** ~~Both~~ lead to a bachelor of fine arts with a major in theatre.

~~The performance stream emphasizes the development of the theatre artist. The studio courses are supplemented by courses in dramatic literature, theatre history, playmaking, and technical theatre. Courses chosen from disciplines outside theatre give the program an interdisciplinary component. Students are encouraged to participate in productions and to develop their own scripts and performance pieces.~~

The production and design stream provides a path for students who wish to ~~study theatre, but prefer production and design aspects of the discipline~~ **develop as emerging artists in live performance environments across the embodied, time-based, and spatial disciplines**.

Students whose interest in theatre is primarily historical, critical or theoretical are directed to the ~~Visual Culture and Performance Studies~~ **Art, Performance, and Cinema Studies** major program, leading to a bachelor of arts.

~~[...]~~

Lower Division Requirements

Students complete a minimum of 42 units including

~~Three~~ **Two** core courses below

~~CA 149 - Sound (3)~~
CA 186 - Art and the Moving Image (3)
CA 285 - Interdisciplinary Studio - Composition/Collaboration (3)

plus one additional CA history/**theory** course outside their major*

and all of

CA 143 - Sound Fundamentals I (3)
~~CA 150 - Introduction to Acting (3)~~
CA 170 - Introduction to Production Technology (3)
~~CA 171 - Introduction to Stage and Production Management (3)~~
CA 174 – Transforming Objects (3)
CA247 – Fixed Media Lab (3)
CA 257W - Context ~~of Theatre~~ I (3)
CA 270 - Production Ensemble I (6)
CA 271 - Production Ensemble II (6)

and one of

CA 120 - Introduction to Dance Forms: Contemporary and Popular (3)
CA 124 - Improvisation Tools and Scores (3)
CA 129 - Movement Fundamentals (3)

CA 150 - Introduction to Acting (3)
CA 160 - Introductory Studio in Visual Art I (3)
CA 161 - Introductory Studio in Visual Art II (3)

~~and one of~~

~~CA 160 - Introductory Studio in Visual Art I (3)~~
~~CA 161 - Introductory Studio in Visual Art II (3)~~

* See advisor for course options.

Upper Division Requirements

Students complete a minimum of 39 units, including all of

CA 357W - Context ~~of Theatre~~ II (3)
CA 370 - Production Ensemble III (6)
CA 371 - Production Ensemble IV (6)
CA 374 - Stage Lighting (4)
CA 375 - Stage Design (4)

and one of

CA 470 - Production Ensemble V (6)
CA 471 - Production Ensemble VI (6)

and one of

~~CA 352 - Mainstage Playmaking (3)~~
~~CA 353 - BlackBox Performance (4)~~
CA 424 - Making/Artistic Research (3)
CA 449 – Installation / Sound Art Lab (3)
CA 450 - ~~Mainstage Performance (4)~~ **Performance as Research (5)**
~~CA 453 - Directing/Performance (4)~~
~~CA 457 - Context of Theatre III (4)~~
CA 485 - Interdisciplinary Collaboration in Contemporary Arts (5)
CA 489 - Interdisciplinary Project in Contemporary Arts (5)

~~and the remaining credits in upper division CA courses which may be drawn from any of the above or from other available CA offerings.~~

and the remaining required units chosen from upper division CA courses (placement in courses is based on prerequisites and/or permission of the instructor). See advisor for course options.

At least three of these units must be from an CA theory or history course outside of Theatre.

Name of Program or Name of Faculty School for the Contemporary Arts
Rationale for change: Updates the Honours program to be consistent with the changes to the Production and Design stream major.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Theatre (Production and Design Stream) Honours

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Theatre (Production and Design Stream) Honours

BACHELOR OF FINE ARTS

~~Theatre~~ **S**tudents **interested in developing live performance environments** may choose ~~a performance stream or a~~ **the** production and design stream **within Theatre and Performance which will** ~~Both~~ lead to a bachelor of fine arts (BFA) with a major in theatre.

~~The performance stream emphasizes the development of the theatre artist. The studio courses are supplemented by courses in dramatic literature, theatre history, playmaking, and technical theatre. Courses chosen from disciplines outside theatre give the program an interdisciplinary component. Students are encouraged to participate in productions and to develop their own scripts and performance pieces.~~

The production and design stream provides a path for students who wish to ~~study theatre, but prefer production and design aspects of the discipline~~ **develop as emerging artists in live performance environments across the embodied, time-based, and spatial disciplines**.

Students whose interest in theatre is primarily historical, critical or theoretical are directed to the ~~Visual Culture and Performance Studies~~ **Art, Performance, and Cinema Studies** major program, leading to a bachelor of arts.

~~[...]~~

Lower Division Requirements

Students complete a minimum of 42 units including

~~Three~~ **Two** core courses below

~~CA 149 - Sound (3)~~
CA 186 - Art and the Moving Image (3)
CA 285 - Interdisciplinary Studio - Composition/Collaboration (3)

plus one additional CA history/theory course outside their major*

and all of

CA 143 - Sound Fundamentals I (3)
~~CA 150 - Introduction to Acting (3)~~
CA 170 - Introduction to Production Technology (3)
~~CA 171 - Introduction to Stage and Production Management (3)~~
CA 174 – Transforming Objects (3)
CA247 – Fixed Media Lab (3)
CA 257W - Context ~~of Theatre~~ I (3)
CA 270 - Production Ensemble I (6)
CA 271 - Production Ensemble II (6)

and one of

CA 120 - Introduction to Dance Forms: Contemporary and Popular (3)
CA 124 - Improvisation Tools and Scores (3)
CA 129 - Movement Fundamentals (3)
CA 150 - Introduction to Acting (3)
CA 160 - Introductory Studio in Visual Art I (3)
CA 161 - Introductory Studio in Visual Art II (3)

~~and one of~~

~~CA 160 - Introductory Studio in Visual Art I (3)~~
~~CA 161 - Introductory Studio in Visual Art II (3)~~

* See advisor for course options.

Upper Division Requirements

Students complete a minimum of 48 units, including all of

CA 357W - Context ~~of Theatre~~ II (3)
CA 370 - Production Ensemble III (6)
CA 371 - Production Ensemble IV (6)
CA 374 - Stage Lighting (4)
CA 375 - Stage Design (4)

and nine units from below

~~CA 352 - Mainstage Playmaking (3) +~~
~~CA 353 - BlackBox Performance (4) +~~
CA 424 - Making/Artistic Research (3)
CA 449 – Installation / Sound Art Lab (3)
CA 450 - ~~Mainstage Performance (4) +~~ **Performance as Research (5)**
~~CA 453 - Directing/Performance (4)~~
~~CA 457 - Context of Theatre III (4)~~
CA 470 - Production Ensemble V (6)
CA 471 - Production Ensemble VI (6)
CA 485 - Interdisciplinary Collaboration in Contemporary Arts (5)
CA 489 - Interdisciplinary Project in Contemporary Arts (5) +

and the remaining required units chosen from upper division CA courses (placement in courses is based on prerequisites and/or permission of the instructor). See advisor for course options.

~~A maximum of 8 upper-division units may come from outside CA (placement in courses is based on prerequisites and/or permission of the instructor).~~

~~+ may not be completed more than once for credit~~

Name of Program or Name of Faculty School for the Contemporary Arts
Rationale for change: Updates the extended minor to be consistent with the changes to the Production and Design stream major.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Theatre Extended Minor

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Theatre Extended Minor

This program is for students interested in technical, design and administrative aspects of theatre. Interdisciplinary requirements place theatre study in the context of contemporary art theory and practice.

[...]

Lower Division Requirements

Students complete a minimum of 42 units including

~~Three~~ **Two** core courses below

~~CA 149 - Sound (3)~~
CA 186 - Art and the Moving Image (3)
CA 285 - Interdisciplinary Studio - Composition/Collaboration (3)

plus one additional CA history/theory course outside their extended minor*

and all of

CA 143 – Sound Fundamentals (3)
~~CA 150 - Introduction to Acting (3)~~
CA 170 - Introduction to Production Technology (3)
~~CA 171 - Introduction to Stage and Production Management (3)~~
CA 174 – Transforming Objects (3)
CA 247 – Fixed Media Lab
CA 257W - Context ~~of Theatre~~ I (3)
CA 270 - Production Ensemble I (6)
CA 271 - Production Ensemble II (6)

and one of

CA 120 - Introduction to Dance Forms: Contemporary and Popular (3)
CA 124 - Improvisation Tools and Scores (3)
CA 129 - Movement Fundamentals (3)
CA 150 – Introduction to Acting
CA 160 - Introductory Studio in Visual Art I (3)
CA 161 - Introductory Studio in Visual Art II (3)

~~and one of~~

~~CA 160 - Introductory Studio in Visual Art I (3)~~
~~CA 161 - Introductory Studio in Visual Art II (3)~~

* See advisor for course options.

[...]

Calendar Entry Change
Interactive Arts and Technology Major – Bachelor of Arts (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload. See the accompanying cover letter for rationale.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Interactive Arts and Technology Major – Bachelor of Arts

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

A major in Interactive Arts in Technology requires **a minimum of** 30 upper division IAT units **and a minimum of 9 upper division courses.** Of these, students must take

IAT 309W - Writing Methods for Research (~~3~~ **4**)

and at least two 400-level courses of at least 3 units each, excluding directed studies.

Of the total of 44 upper division units required to their degree, students must complete a total of 24 units chosen from the following arts courses to satisfy the BA requirements:

IAT 312 - Foundations of Game Design (~~3~~**4**)
IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~**4**)
IAT 330 - Make Change Studio I: Introduction (3)
IAT 334 - Interface Design (~~3~~**4**)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~**4**)
IAT 344 - Moving Images (~~3~~**4**)
IAT 380 - Special Topics in Interactive Arts and Technology (Arts) (3)
IAT 386 - Directed Studies (3)
IAT 430 - Make Change Studio III: Refinement and Production (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 438 - User Experience Design (~~3~~**6**)
IAT 443 - Interactive Video (~~3~~**4**)

IAT 445 - Immersive Environments (~~3~~4)
IAT 480 - Special Topics in Interactive Arts and Technology (Arts) (3)
IAT 486 - Directed Studies (3)
IAT 499 - Graduation Project (6)

and any upper division course from communication (CMNS), publishing (PUB), cognitive science (COGS), contemporary arts (CA), human geography (GEOG), philosophy (PHIL), business (BUS), or psychology (PSYC).

To enroll in 400 level courses, students must complete the lower division requirements as specified above and a required upper division writing course, IAT 309W.

[...]

Concentrations

[...]

Media Arts

[...]

Students who choose this concentration complete six of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~4)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~4)
IAT 344 - Moving Images (~~3~~4)
IAT 443 - Interactive Video (~~3~~4)
IAT 445 - Immersive Environments (~~3~~4)

Interactive Systems

[...]

Students who choose this concentration complete six of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~4)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~4)

IAT 410 - Advanced Game Design (~~3~~4)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

Design

[...]

Students who choose this concentration complete six of

IAT 333 - Interaction Design Methods (~~3~~4)
IAT 334 - Interface Design (~~3~~4)
IAT 336 - Materials in Design (~~3~~4)
IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~4)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~6)

Calendar Entry Change
Interactive Arts and Technology Second Degree – Bachelor of Arts (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload. See the accompanying cover letter for rationale.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Interactive Arts and Technology Second Degree – Bachelor of Arts

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

Students must complete 44 upper division units as part of their degree. Of these, students must complete **a minimum of** 30 upper division IAT units **and a minimum of 9 upper division courses**, including

IAT 309W - Writing Methods for Research (~~3~~ **4**)

and at least two 400-level IAT courses of at least three units each, excluding directed studies.

24 of the 44 upper division units must be chosen from the following arts courses to satisfy BA requirements:

IAT 312 - Foundations of Game Design (~~3~~**4**)
IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~**4**)
IAT 330 - Make Change Studio I: Introduction (3)
IAT 334 - Interface Design (~~3~~**4**)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~**4**)
IAT 344 - Moving Images (~~3~~**4**)
IAT 380 - Special Topics in Interactive Arts and Technology (Arts) (3)
IAT 386 - Directed Studies (3)
IAT 430 - Make Change Studio III: Refinement and Production (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 438 - User Experience Design (~~3~~**6**)

IAT 443 - Interactive Video (~~3~~4)
IAT 445 - Immersive Environments (~~3~~4)
IAT 480 - Special Topics in Interactive Arts and Technology (Arts) (3)
IAT 486 - Directed Studies (3)
IAT 499 - Graduation Project (6)

and any upper division course from communication (CMNS), publishing (PUB), cognitive science (COGS), contemporary arts (CA), human geography (GEOG), philosophy (PHIL), business (BUS), or psychology (PSYC).

To enroll in 400 level courses, students ~~have to~~ **must** complete ~~any required course prerequisites~~ **the lower division requirements as specified above** and a required upper division writing course, IAT 309W.

[…]

Concentrations

[…]

Media Arts

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~4)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~4)
IAT 344 - Moving Images (~~3~~4)
IAT 443 - Interactive Video (~~3~~4)
IAT 445 - Immersive Environments (~~3~~4)

Interactive Systems

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~4)
IAT 355 - Introduction to Visual Analytics (3)

IAT 359 - Mobile Computing (~~3~~4)
IAT 410 - Advanced Game Design (~~3~~4)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

Design

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 333 - Interaction Design Methods (~~3~~4)
IAT 334 - Interface Design (~~3~~4)
IAT 336 - Materials in Design (~~3~~4)
IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~4)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~6)

Calendar Entry Change
Interactive Arts and Technology Major – Bachelor of Science (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload. See the accompanying cover letter for rationale.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Interactive Arts and Technology Major – Bachelor of Science

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

A major in Interactive Arts and Technology requires **a minimum of** 30 upper division IAT units **and a minimum of 9 upper division courses.** Of these, students must take

IAT 309W - Writing Methods for Research (~~3~~ **4**)

and at least two 400-level courses of at least 3 units each, excluding directed studies.

Of the total of 44 upper division units required to their degree, students must complete a total of 24 units chosen from the following science courses to satisfy the BSc requirements:

IAT 330 - Make Change Studio I: Introduction (3)
IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~**4**)
IAT 381 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 387 - Directed Studies (3)
IAT 410 - Advanced Game Design (~~3~~**4**)

IAT 430 - Make Change Studio III: Refinement and Production (3)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)
IAT 481 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 487 - Directed Studies (3)
IAT 499 - Graduation Project (6)

and any upper division course from computing science (CMPT), engineering science (ENSC), biomedical physiology and kinesiology (BPK), management and systems science (MSSC), mathematics (MATH), mathematics and computing science (MACM), cognitive science (COGS) or psychology (PSYC).

To enroll in 400 level courses, students must complete the lower division requirements as specified above and a required upper division writing course, IAT 309W.

NOTE: SFU students accepted in the accelerated master's within the School of Interactive Arts and Technology may apply a maximum of nine graduate course units, taken while completing the bachelor's degree, towards the upper division electives of the bachelor's program and the requirements of the master's degree. At least six of the nine graduate course units must come from IAT 803, 804, or 806. For more information go to: https://www.sfu.ca/gradstudies/apply/programs/accelerated-masters.html.

Concentrations

[...]

Media Arts

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~4)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~4)
IAT 344 - Moving Images (~~3~~4)
IAT 443 - Interactive Video (~~3~~4)
IAT 445 - Immersive Environments (~~3~~4)

Interactive Systems

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (3~~4~~)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (3~~4~~)
IAT 410 - Advanced Game Design (3~~4~~)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

Design

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 333 - Interaction Design Methods (3~~4~~)
IAT 334 - Interface Design (3~~4~~)
IAT 336 - Materials in Design (3~~4~~)
IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (3~~4~~)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (3~~6~~)

Calendar Entry Change
Interactive Arts and Technology Second Degree – Bachelor of Science (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload. See the accompanying cover letter for the rationale. Additionally, IAT369 is added to the list, as the program requirements were not updated after the course was introduced.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Interactive Arts and Technology Second Degree – Bachelor of Science

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

Students must complete 44 upper division units as part of their degree. Of these, students must complete **a minimum of** 30 upper division IAT units **and a minimum of 9 upper division courses**, including

IAT 309W - Writing Methods for Research (~~3~~ **4**)

and at least two 400-level IAT courses of three units each, excluding directed studies.

24 of the 44 upper division units must be chosen from the following science courses to satisfy BSc requirements:

IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (4)
IAT 381 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 387 - Directed Studies (3)
IAT 410 - Advanced Game Design (~~3~~**4**)
IAT 432 - Design Evaluation (3)

IAT 437 - Representation and Fabrication (3)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)
IAT 481 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 487 - Directed Studies (3)
IAT 499 - Graduation Project (6)

Or upper division course from: computing science (CMPT), engineering science (ENSC), biomedical physiology and kinesiology (BPK), management and systems science (MSSC), mathematics (MATH), mathematics and computing science (MACM), cognitive science (COGS), or psychology (PSYC)

To enroll in 400 level courses, students ~~have to~~ **must** complete ~~any required course prerequisites~~ **the lower division requirements as specified above** and a required upper division writing course, IAT 309W.

[…]

Concentrations

[…]

Media Arts

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~**4**)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~**4**)
IAT 344 - Moving Images (~~3~~**4**)
IAT 443 - Interactive Video (~~3~~**4**)
IAT 445 - Immersive Environments (~~3~~**4**)

Interactive Systems

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 351 - Advanced Human-Computer Interaction (3)

IAT 352 - Internet Computing Technologies (~~3~~4)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~4)
IAT 410 - Advanced Game Design (~~3~~4)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

Design

[...]

Students who choose this concentration ~~must~~ complete six of

IAT 333 - Interaction Design Methods (~~3~~4)
IAT 334 - Interface Design (~~3~~4)
IAT 336 - Materials in Design (~~3~~4)
IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~4)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~6)

Calendar Entry Change
Interactive Arts and Technology Honours – Bachelor of Arts (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload**.** See the accompanying cover letter for rationale**.**
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Interactive Arts and Technology Honours – Bachelor of Arts

Calendar Change: "to" and "from" sections are not required**.** All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

An Honours, Bachelor of Arts in Interactive Arts and Technology requires 48 upper division IAT units**.** Of these, students must take

IAT 309W - Writing Methods for Research (~~3~~**4**)

and at least two 400-level IAT courses of at least 3 units each, excluding directed studies

and

six (6) IAT units selected from Designated Honours courses from Route 1 OR Route 2:

Route 1

One of

IAT 801 - Qualitative Research Methods and Design (3)
IAT 802 - Quantitative Research Methods and Design (3)
IAT 806 - Interdisciplinary Design Approaches to Computing (3)

One of

IAT 490 - Honours Project I (3)
IAT 491 - Honours Project II (3)

OR

Route 2

IAT 490 - Honours Project I (3)
IAT 491 - Honours Project II (3)

To satisfy the BA requirements of this program students complete a total of 24 units chosen from the following arts courses:

IAT 312 - Foundations of Game Design (~~3~~**4**)
IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~**4**)
IAT 330 - Make Change Studio I: Introduction (3)
IAT 334 - Interface Design (~~3~~**4**)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~**4**)
IAT 344 - Moving Images (~~3~~**4**)
IAT 380 - Special Topics in Interactive Arts and Technology (Arts) (3)
IAT 386 - Directed Studies (3)
IAT 430 - Make Change Studio III: Refinement and Production (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 438 - User Experience Design (~~3~~**6**)
IAT 443 - Interactive Video (~~3~~**4**)
IAT 445 - Immersive Environments (~~3~~**4**)
IAT 480 - Special Topics in Interactive Arts and Technology (Arts) (3)
IAT 486 - Directed Studies (3)

and any upper division course from communication (CMNS), publishing (PUB), cognitive science (COGS), contemporary arts (CA), human geography (GEOG), philosophy (PHIL), business (BUS), or psychology (PSYC).

To enroll in 400 level courses, students must complete the lower division requirements as specified above and a required upper division writing course, IAT 309W.

NOTE: SFU students accepted in the accelerated master's within the School of Interactive Arts and Technology may apply a maximum of nine graduate course units, taken while completing the bachelor's degree, towards the upper division electives of the bachelor's program and the requirements of the master's degree. At least six of the nine graduate course units must come from IAT 803, 804, or 806. For more information go to: https://www.sfu.ca/gradstudies/apply/programs/accelerated-masters.html.

Concentrations

[…]

Media Arts

[…]

Students who choose this concentration complete six of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~34~~)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~34~~)
IAT 344 - Moving Images (~~34~~)
IAT 443 - Interactive Video (~~34~~)
IAT 445 - Immersive Environments (~~34~~)

Interactive Systems

[…]

Students who choose this concentration ~~must~~ complete six of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~34~~)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~34~~)
IAT 410 - Advanced Game Design (~~34~~)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

Design

[…]

Students who choose this concentration ~~must~~ complete six of

IAT 333 - Interaction Design Methods (~~34~~)
IAT 334 - Interface Design (~~34~~)
IAT 336 - Materials in Design (~~34~~)

IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~**6**)

Calendar Entry Change
Interactive Arts and Technology Honours – Bachelor of Science (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload. See the accompanying cover letter for rationale.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Interactive Arts and Technology Honours – Bachelor of Science

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

An Honours, Bachelor of Science in Interactive Arts and Technology requires 48 upper division IAT units. Of these, students must take

IAT 309W - Writing Methods for Research (~~3~~**4**)

and at least two 400-level IAT courses of at least 3 units each, excluding directed studies

and

six (6) IAT units selected from Designated Honours courses from Route 1 OR Route 2:

Route 1

One of

IAT 801 - Qualitative Research Methods and Design (3)
IAT 802 - Quantitative Research Methods and Design (3)
IAT 806 - Interdisciplinary Design Approaches to Computing (3)

One of

IAT 490 - Honours Project I (3)
IAT 491 - Honours Project II (3)

OR

Route 2

IAT 490 - Honours Project I (3)
IAT 491 - Honours Project II (3)

To satisfy the BSc requirements of this program students will complete a total of 24 units chosen from the following science courses:

IAT 330 - Make Change Studio I: Introduction (3)
IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~**4**)
IAT 381 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 387 - Directed Studies (3)
IAT 410 - Advanced Game Design (~~3~~**4**)
IAT 430 - Make Change Studio III: Refinement and Production (3)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)
IAT 481 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 487 - Directed Studies (3)

and any upper division course from computing science (CMPT), engineering science (ENSC), biomedical physiology and kinesiology (BPK), management and systems science (MSSC), mathematics (MATH), mathematics and computing science (MACM), cognitive science (COGS) or psychology (PSYC).

To enroll in 400 level courses, students must complete the lower division requirements as specified above and a required upper division writing course, IAT 309W.

NOTE: SFU students accepted in the accelerated master's within the School of Interactive Arts and Technology may apply a maximum of nine graduate course units, taken while completing the bachelor's degree, towards the upper division electives of the bachelor's program and the requirements of the master's degree. At least six of the nine graduate course units must come from IAT 803, 804, or 806. For more information go

to: https://www.sfu.ca/gradstudies/apply/programs/accelerated-masters.html.

Concentrations

[…]

Media Arts

[…]

Students who choose this concentration complete six of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~34~~)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~34~~)
IAT 344 - Moving Images (~~34~~)
IAT 443 - Interactive Video (~~34~~)
IAT 445 - Immersive Environments (~~34~~)

Interactive Systems

[…]

Students who choose this concentration ~~must~~ complete six of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~34~~)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~34~~)
IAT 410 - Advanced Game Design (~~34~~)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

Design

[…]

Students who choose this concentration ~~must~~ complete six of

IAT 333 - Interaction Design Methods (~~34~~)
IAT 334 - Interface Design (~~34~~)

IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~**6**)

Calendar Entry Change
Interactive Arts and Technology and Business Joint Major – Bachelor of Science (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload. We maintain that the groupings of courses provide a focus for the join majors with limited UD SIAT courses to complete. See the accompanying cover letter for rationale.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Interactive Arts and Technology and Business Joint Major – Bachelor of Science

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Interactive Arts and Technology Requirements

SIAT Concentrations

A concentration is an area of specialization that approved IAT majors may pursue within their Bachelor of Arts. SIAT offers concentrations in Media Arts, Interactive Systems and Design.

Students are required to complete ~~five courses~~ **15 units** from one concentration listed below and an additional six upper division IAT units (6).

To enroll in 400 level courses, students must complete the IAT lower division requirements as specified above and a required upper division writing course.

MEDIA ARTS

This concentration studies the creation, analysis and understanding of new media. New media environments are both computational artifacts and cultural experiences that include historical, social, aesthetic, and economic processes.

Graduates will be skilled in the critical analysis and making of new media forms such as electronic games, digital video, computer animation, and interactive multimedia.

Students complete ~~five~~ **15 units** of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~**4**)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~**4**)
IAT 344 - Moving Images (~~3~~**4**)
IAT 443 - Interactive Video (~~3~~**4**)
IAT 445 - Immersive Environments (~~3~~**4**)

INTERACTIVE SYSTEMS

Students in this concentration learn how to design and program interactive technology used in work, play and learning.

This concentration emphasizes applying human-computer interaction principles to highly interactive applications, devices and systems. Graduates will be able to conceive, design and program applications in areas such as the web, handheld devices and games.

Students complete ~~five~~ **15 units** of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~**4**)
IAT 410 - Advanced Game Design (~~3~~**4**)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

DESIGN

This concentration focuses on the design and use of interactive products and systems. It emphasizes designing and understanding all aspects of successful designs. Graduates will demonstrate ability in contemporary design from requirements through design to critique and evaluation.

Students complete ~~five~~ **15 units** of

IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 334 - Interface Design (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 432 - Design Evaluation (3)

IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~**6**)

IAT BSc Requirements

Of the total of 44 upper division units required to their degree, students must complete a total of 24 units chosen from the following science courses to satisfy the BSc requirements:

IAT 330 - Make Change Studio I: Introduction (3)
IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~4)
IAT 381 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 387 - Directed Studies (3)
IAT 410 - Advanced Game Design (~~3~~**4**)
IAT 430 - Make Change Studio III: Refinement and Production (3)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)
IAT 481 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 487 - Directed Studies (3)
IAT 499 - Graduation Project (6)

~~or~~ **and any** upper division course from computing science (CMPT), engineering science (ENSC), biomedical physiology and kinesiology (BPK), management and systems science (MSSC), mathematics (MATH), mathematics and computing science (MACM), cognitive science (COGS) or psychology (PSYC).

Calendar Entry Change
Interactive Arts and Technology and Business Joint Major – Bachelor of Arts or Bachelor of Business Administration

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload. We maintain that the groupings of courses provide a focus for the join majors with limited UD SIAT courses to complete. See the accompanying cover letter for rationale.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Interactive Arts and Technology and Business Joint Major – Bachelor of Arts or Bachelor of Business Administration

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

SIAT Concentrations

A concentration is an area of specialization that approved IAT majors may pursue within their Bachelor of Arts. SIAT offers concentrations in Media Arts, Interactive Systems and Design.

Students are required to complete ~~five courses~~ **15 units** from one concentration listed below and an additional six upper division IAT units (6).

To enroll in 400 level courses, students must complete the IAT lower division requirements as specified above and a required upper division writing course.

MEDIA ARTS

This concentration studies the creation, analysis and understanding of new media. New media environments are both computational artifacts and cultural experiences that include historical, social, aesthetic, and economic processes.

Graduates will be skilled in the critical analysis and making of new media forms such as electronic games, digital video, computer animation, and interactive multimedia.

Students complete ~~five~~ **15 units** of

IAT 313 - Narrative and New Media (3)

IAT 320 - Body Interface (~~3~~**4**)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~**4**)
IAT 344 - Moving Images (~~3~~**4**)
IAT 443 - Interactive Video (~~3~~**4**)
IAT 445 - Immersive Environments (~~3~~**4**)

INTERACTIVE SYSTEMS

Students in this concentration learn how to design and program interactive technology used in work, play and learning.

This concentration emphasizes applying human-computer interaction principles to highly interactive applications, devices and systems. Graduates will be able to conceive, design and program applications in areas such as the web, handheld devices and games.

Students complete ~~five~~ **15 units** of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~**4**)
IAT 410 - Advanced Game Design (~~3~~**4**)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

DESIGN

This concentration focuses on the design and use of interactive products and systems. It emphasizes designing and understanding all aspects of successful designs. Graduates will demonstrate ability in contemporary design from requirements through design to critique and evaluation.

Students complete ~~five~~ **15 units** of

IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 334 - Interface Design (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~**6**)

Calendar Entry Change
Communication and Interactive Arts and Technology Joint Major – Bachelor of Arts (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload. We maintain that the groupings of courses provide a focus for the join majors with limited UD SIAT courses to complete. See the accompanying cover letter for rationale.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Communication and Interactive Arts and Technology Joint Major – Bachelor of Arts

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

INTERACTIVE ARTS AND TECHNOLOGY

SIAT Concentrations

A concentration is an area of specialization that approved IAT majors may pursue within their Bachelor of Arts. SIAT offers concentrations in Media Arts, Interactive Systems and Design.

Students are required to complete ~~five courses~~ **15 units** from one concentration listed below and an additional six upper division IAT units (6).

To enroll in 400 level courses, students must complete the IAT lower division requirements as specified above and a required upper division writing course.

MEDIA ARTS

This concentration studies the creation, analysis and understanding of new media. New media environments are both computational artifacts and cultural experiences that include historical, social, aesthetic, and economic processes.

Graduates will be skilled in the critical analysis and making of new media forms such as electronic games, digital video, computer animation, and interactive multimedia.

Students complete ~~five~~ **15 units** of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~**4**)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~**4**)
IAT 344 - Moving Images (~~3~~**4**)
IAT 443 - Interactive Video (~~3~~**4**)
IAT 445 - Immersive Environments (~~3~~**4**)

INTERACTIVE SYSTEMS

Students in this concentration learn how to design and program interactive technology used in work, play and learning.

This concentration emphasizes applying human-computer interaction principles to highly interactive applications, devices and systems. Graduates will be able to conceive, design and program applications in areas such as the web, handheld devices and games.

Students complete ~~five~~ **15 units** of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~**4**)
IAT 410 - Advanced Game Design (~~3~~**4**)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

DESIGN

This concentration focuses on the design and use of interactive products and systems. It emphasizes designing and understanding all aspects of successful designs. Graduates will demonstrate ability in contemporary design from requirements through design to critique and evaluation.

Students complete ~~five~~ **15 units** of

IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 334 - Interface Design (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)

IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~**6**)

Calendar Entry Change
Communication and Interactive Arts and Technology Joint Major – Bachelor of Science (FCAT)

Rationale for change: The program changes result from adjusting course units following SFU Senate directives on course hourly workload**.** We maintain that the groupings of courses provide a focus for the join majors with limited UD SIAT courses to complete**.** See the accompanying cover letter for rationale**.**
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Communication and Interactive Arts and Technology Joint Major – Bachelor of Science

Calendar Change: "to" and "from" sections are not required**.** All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements
INTERACTIVE ARTS AND TECHNOLOGY SIAT Concentrations A concentration is an area of specialization that approved IAT majors may pursue within their Bachelor of Arts**.** SIAT offers concentrations in Media Arts, Interactive Systems and Design**.** Students are required to complete ~~five courses~~ **15 units** from one concentration listed below and an additional six upper division IAT units (6)**.** To enroll in 400 level courses, students must complete the IAT lower division requirements as specified above and a required upper division writing course**.** *MEDIA ARTS*

This concentration studies the creation, analysis and understanding of new media. New media environments are both computational artifacts and cultural experiences that include historical, social, aesthetic, and economic processes.

Graduates will be skilled in the critical analysis and making of new media forms such as electronic games, digital video, computer animation, and interactive multimedia.

Students complete ~~five~~ **15 units** of

IAT 313 - Narrative and New Media (3)
IAT 320 - Body Interface (~~3~~**4**)
IAT 340 - Sound Design (3)
IAT 343 - Animation (~~3~~**4**)
IAT 344 - Moving Images (~~3~~**4**)
IAT 443 - Interactive Video (~~3~~**4**)
IAT 445 - Immersive Environments (~~3~~**4**)

INTERACTIVE SYSTEMS

Students in this concentration learn how to design and program interactive technology used in work, play and learning.

This concentration emphasizes applying human-computer interaction principles to highly interactive applications, devices and systems. Graduates will be able to conceive, design and program applications in areas such as the web, handheld devices and games.

Students complete ~~five~~ **15 units** of

IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~**4**)
IAT 410 - Advanced Game Design (~~3~~**4**)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)

DESIGN

This concentration focuses on the design and use of interactive products and systems. It emphasizes designing and understanding all aspects of successful designs. Graduates will demonstrate ability in contemporary design from requirements through design to critique and evaluation.

Students complete ~~five~~ **15 units** of

IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 334 - Interface Design (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 431 - Speculative Design (~~3~~**4**)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 438 - User Experience Design (~~3~~**6**)

IAT BSc Requirements

Of the total of 44 upper division units required to their degree, students must complete a total of 24 units chosen from the following science courses to satisfy the BSc requirements:

IAT 330 - Make Change Studio I: Introduction (3)
IAT 333 - Interaction Design Methods (~~3~~**4**)
IAT 336 - Materials in Design (~~3~~**4**)
IAT 339 - Web Design and Development (3)
IAT 351 - Advanced Human-Computer Interaction (3)
IAT 352 - Internet Computing Technologies (~~3~~**4**)
IAT 355 - Introduction to Visual Analytics (3)
IAT 359 - Mobile Computing (~~3~~4)
IAT 381 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 387 - Directed Studies (3)
IAT 410 - Advanced Game Design (~~3~~**4**)
IAT 430 - Make Change Studio III: Refinement and Production (3)
IAT 432 - Design Evaluation (3)
IAT 437 - Representation and Fabrication (3)
IAT 452 - Developing Design Tools (3)
IAT 455 - Computational Media (3)
IAT 481 - Special Topics in Interactive Arts and Technology (Science) (3)
IAT 487 - Directed Studies (3)
IAT 499 - Graduation Project (6)

~~or~~ **and any** upper division course from computing science (CMPT), engineering science (ENSC), biomedical physiology and kinesiology (BPK), management and systems science (MSSC), mathematics (MATH), mathematics and computing science (MACM), cognitive science (COGS) or psychology (PSYC).

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Name of Program or Name of Faculty School of Resource and Environmental Management
Rationale for change: The 'Resource and Environmental Management Sectors' block of courses in the upper division program requirements is an important component of the REM Major/Honours programs since it exposes students to the key stakeholders, common management processes and practices of industries where they will likely find employment after graduating. However, the limited number of 400-level courses can make it difficult for students to complete this requirement in a timely manner (particularly in the planning stream), and course substitution requests are not uncommon. To address this issue, the proposed revisions expand the sector block course lists of the management and planning streams with several suitable courses from our existing suite of REM/PLAN courses. The proposed changes also increase consistency in the listed courses between the management and planning streams. We will further consider this issue in our course development plans.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Resource and Environmental Management Major

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

Management Stream

[...]

Resource and Environmental Management Sectors

Choose two of (one must be at the 400 level)

GEOG 327 - Geography of Tourism (4)
PLAN 406 - Community Planning and Development (4)
PLAN 408 - Environmental Planning and Sustainable Communities (4)
REM 350 - Energy Management for a Sustainable Climate and Society (4)
REM 355 - Sustainable Transportation Management (3)
REM 357 - Planning for Sustainable Food Systems (3)

REM 423 - Research Methods in Fisheries Assessment (4)
REM 427 - Avalanche Risk Management (4)
REM 431 - Climate Change and Environmental Management (4)
REM 445 - Environmental Risk Assessment (4)
REM 454 - Water Security (4)
REM 471 - Forest Ecosystem Management (4)

[...]

Planning Stream

[...]

Resource and Environmental Management Sectors

Choose two of (one must be at the 400 level)

GEOG 324 - Geography of Transportation (4)
GEOG 327 - Geography of Tourism (4)
GEOG 363 - Urban Planning and Policy (4)
GEOG 385 - Food and the City (4)
PLAN 406 - Community Planning and Development (4)
PLAN 408 - Environmental Planning and Sustainable Communities (4)
REM 350 - Energy Management for a Sustainable Climate and Society (4)
REM 355 - Sustainable Transportation Management (3)
REM 357 - Planning for Sustainable Food Systems (3)
REM 370 - Global Resource Issues in Oceanography (4)
REM 375 - Ecology and Conservation of Coastal BC (3)
REM 388 - Wildlife Conservation (3)
REM 423 - Research Methods in Fisheries Assessment (4)
REM 427 - Avalanche Risk Management (4)
REM 431 - Climate Change and Environmental Management (4)
REM 445 - Environmental Risk Assessment (4)
REM 454 - Water Security (4)
REM 471 - Forest Ecosystem Management (4)

[...]

Name of Program or Name of Faculty
School of Resource and Environmental Management

Rationale for change:
The 'Resource and Environmental Management Sectors' block of courses in the upper division program requirements is an important component of the REM Major/Honours programs since it exposes students to the key stakeholders, common management processes and practices of industries where they will likely find employment after graduating. However, the limited number of 400-level courses can make it difficult for students to complete this requirement in a timely manner (particularly in the planning stream), and course substitution requests are not uncommon. To address this issue, the proposed revisions expand the sector block course lists of the management and planning streams with several suitable courses from our existing suite of REM/PLAN courses. The proposed changes also increase consistency in the listed courses between the management and planning streams. We will further consider this issue in our course development plans.

Effective term and year:
Fall 2023

The following program(s) will be affected by these changes:
Resource and Environmental Management Honours

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Upper Division Requirements

[...]

Resource and Environmental Management Sectors

Choose two of (one must be at the 400 level)

GEOG 327 - Geography of Tourism (4)
PLAN 406 - Community Planning and Development (4)
PLAN 408 - Environmental Planning and Sustainable Communities (4)
REM 350 - Energy Management for a Sustainable Climate and Society (4)
REM 355 - Sustainable Transportation Management (3)
REM 357 - Planning for Sustainable Food Systems (3)
REM 423 - Research Methods in Fisheries Assessment (4)
REM 427 - Avalanche Risk Management (4)

REM 431 - Climate Change and Environmental Management (4)
REM 445 - Environmental Risk Assessment (4)
REM 454 - Water Security (4)
REM 471 - Forest Ecosystem Management (4)

[...]

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

PROGRAM MODIFICATION TEMPLATE

Calendar Entry Change
Name of Program or Name of Faculty: Department of Earth Sciences

Rationale for change: These changes address modifications to the lower and upper division program to accommodate recommendations from the last department review and to better meet desired educational goals for our majors.
Effective term and year: Fall, 2023
The following program(s) will be affected by these changes: Earth Sciences Major (Geology, Environmental Geoscience and General Streams)

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Lower Division Requirements

All students, ~~no matter which streams they will choose,~~ **regardless of chosen stream** will complete a minimum of ~~55~~ **56** units, including all of

CHEM 121 - General Chemistry and Laboratory I (4)
CHEM 122 - General Chemistry II (2)
CHEM 126 - General Chemistry Laboratory II (2)
EASC 101 - Dynamic Earth (3)
EASC 201 - Stratigraphy and Sedimentation (3)
EASC 202 - Introduction to Mineralogy (3)
EASC 204 - Structural Geology I (3)
EASC 205 - Introduction to Petrology (3)
EASC 206 - Field Geology I ~~(2)~~ **(3)**
EASC 207 - Introduction to Applied Geophysics (3)
EASC 208 - Introduction to Geochemistry (3)
EASC 209W - Environmental Geoscience (4)
EASC 210 - Evolving Earth (3)
MATH 151 - Calculus I (3) or MATH 150 - Calculus I with Review (4)
MATH 152 - Calculus II (3)

and one of

STAT 201 - Statistics for the Life Sciences (3)
STAT 270 - Introduction to Probability and Statistics (3)

all of

PHYS 101 - Physics for the Life Sciences I (3) **
PHYS 102 - Physics for the Life Sciences II (3) **
PHYS 132 - Physics Laboratory I (1) **
PHYS 133 - Physics Laboratory II (1) **

or all of

PHYS 120 - Mechanics and Modern Physics (3)
PHYS 121 - Optics, Electricity and Magnetism (3)
PHYS 132 - Physics Laboratory I (1)
PHYS 133 - Physics Laboratory II (1)

or all of

PHYS 125 - Mechanics and Special Relativity (3)
PHYS 126 - Electricity, Magnetism and Light (3)
PHYS 132 - Physics Laboratory I (1)
PHYS 133 - Physics Laboratory II (1)

or both of

PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)
PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

** Students are encouraged to complete the standard stream (PHYS 120, 121, 132, 133) or the advanced stream (PHYS 125, 126, 132, 133). Students may also choose to complete the studio physics stream (PHYS 140, 141). Students who complete the life sciences stream (PHYS 101, 102, 130) (which has a corequisite of BISC 100 or 101 or 102) with a minimum B grade should have sufficient preparation for the major program.

Upper Division Requirements

Students are encouraged to select upper division elective courses in consultation with an academic advisor, as EGBC has specific groupings of elective courses for each stream, respectively.

Geology Stream

Students who choose this stream will complete a minimum of 45 units, including

all of

EASC 301 - Igneous Petrology (3)
EASC 302 - Sedimentary Petrology (3)
EASC 305 - Quantitative Methods for the Earth Sciences (3)
EASC 306 - Field Geology II (3)
EASC 308 - Field Geology III (3)
EASC 309 - Global Tectonics (3)
EASC 310W - Paleontology (3)
EASC 311 - Metamorphic Petrology (3)

~~and at least 1 of~~

~~EASC 302 - Sedimentary Petrology (3)~~
~~EASC 311 - Metamorphic Petrology (3)~~

and at least one of

EASC 304 - Hydrogeology (3)
EASC 313 - Introduction to Soil and Rock Engineering (3)
EASC 403 - Quaternary Geology (3)

and at least ~~24~~ **18** units (with a minimum of ~~21~~ **15** units from EASC) chosen from

EASC 300 - Selected Topics in Earth Sciences (3)
~~EASC 302 - Sedimentary Petrology (3)~~
EASC 304 - Hydrogeology (3)
~~EASC 305 - Quantitative Methods for the Earth Sciences (3)~~
EASC 307 - Applied Geophysics (3)
~~EASC 311 - Metamorphic Petrology (3)~~
EASC 312 - Stratigraphy (3)
EASC 313 - Introduction to Soil and Rock Engineering (3)
EASC 314 - Principles of Glaciology (3)
EASC 315W - Geochemistry of Natural Waters (3)
EASC 317 - Global Geophysics (3)
EASC 400 - Selected Topics in Earth Sciences (3)
EASC 401 - Mineral Deposits (3)
EASC 402 - Sedimentology (3)
EASC 403 - Quaternary Geology (3)
EASC 404 - Structural Geology II (3)
EASC 405 - Water, Environment, and Climate Change (3)
EASC 408 - Regional Geology of Western Canada (3)
EASC 410 - Groundwater Contamination and Transport (3)
EASC 411 - Terrain Analysis (3)
EASC 413 – Engineering Geology and Resource Geotechnics (3)
EASC 415 - Groundwater Modelling (3)
EASC 416 - Field and Lab Techniques in Hydrogeology (3)
EASC 420 - ~~Petroleum Geology~~ **Energy Geosystems** (3)

EASC 421 - Volcanology (3)
EASC 491 - Directed Readings (1) *
EASC 492 - Directed Readings (2) *
EASC 493 - Directed Readings (3) *
EASC 498 - Undergraduate Research 1 (3)
GEOG 311 - Hydrology (4)
GEOG 313 - River Geomorphology (4)
GEOG 355 - Geographical Information Science II (4)
REM 334 - Earth's Past Climates (4)
REM 445 – Environmental Risk Assessment (4)
REM 446 – Environmental and Social Impact Assessment (4)
SCI 301 - Science Communication: An Introduction (3)

provided the courses have not been used in any of the course groupings listed above.

Environmental Geoscience Stream

Students who choose this stream will complete a minimum of 45 units, including

all of

EASC 304 - Hydrogeology (3)
EASC 305 - Quantitative Methods for the Earth Sciences (3)
EASC 306 - Field Geology II (3)
EASC 308 - Field Geology III (3)
EASC 313 - Introduction to Soil and Rock Engineering (3)
EASC 315W - Geochemistry of Natural Waters (3)
EASC 403 - Quaternary Geology (3)

and at least 1 of

EASC 301 - Igneous Petrology (3)
EASC 302 - Sedimentary Petrology (3)
EASC 309 - Global Tectonics (3)
EASC 310W - Paleontology (3)

and at least ~~24~~ **21** units (with a minimum of ~~18~~ **15** units from EASC) chosen from

EASC 300 - Selected Topics in Earth Sciences (3)
EASC 301 - Igneous Petrology (3)
EASC 302 - Sedimentary Petrology (3)
~~EASC 305 - Quantitative Methods for the Earth Sciences (3)~~
EASC 307 - Applied Geophysics (3)
EASC 309 - Global Tectonics (3)

EASC 310W - Paleontology (3)
EASC 311 - Metamorphic Petrology (3)
EASC 312 - Stratigraphy (3)
EASC 314 - Principles of Glaciology (3)
EASC 317 - Global Geophysics (3)
EASC 400 - Selected Topics in Earth Sciences (3)
EASC 401 - Mineral Deposits (3)
EASC 402 - Sedimentology (3)
EASC 404 - Structural Geology II (3)
EASC 405 - Water, Environment, and Climate Change (3)
EASC 408 - Regional Geology of Western Canada (3)
EASC 410 - Groundwater Contamination and Transport (3)
EASC 411 - Terrain Analysis (3)
EASC 413 - Engineering Geology and Resource Geotechnics (3)
EASC 415 - Groundwater Modelling (3)
EASC 416 - Field and Lab Techniques in Hydrogeology (3)
EASC 420 - ~~Petroleum Geology~~ **Energy Geosystems** (3)
EASC 421 - Volcanology (3)
EASC 491 - Directed Readings (1) *
EASC 492 - Directed Readings (2) *
EASC 493 - Directed Readings (3) *
EASC 498 - Undergraduate Research 1 (3)
GEOG 311 - Hydrology (4)
GEOG 313 - River Geomorphology (4)
GEOG 355 - Geographical Information Science II (4)
REM 334 - Earth's Past Climates (4)
REM 445 - Environmental Risk Assessment (4)
REM 446 - Environmental and Social Impact Assessment (4)
SCI 301 - Science Communication: An Introduction (3)

provided the courses have not been used in any of the course groupings listed above.

General Earth Sciences Stream

Students who choose this stream will complete a minimum of 45 units, including all of

EASC 306 - Field Geology II (3)
EASC 308 - Field Geology III (3)

and one of

EASC 310W - Paleontology (3)
EASC 315W - Geochemistry of Natural Waters (3)

and at least 36 units of upper division EASC or related courses that are approved by the department.*

* students may only complete a maximum of three units from a combination of EASC 491, 492, or 493.

Calendar Entry Change
Name of Program or Name of Faculty: Department of Earth Sciences

Rationale for change: These changes address modifications to the lower and upper division program to accommodate recommendations from the last department review and to better meet desired educational goals for our majors.
Effective term and year: Fall, 2023
The following program(s) will be affected by these changes: Earth Sciences Honours program (Geology Stream and Environmental Geoscience Stream)

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Lower Division Requirements

All students, ~~no matter which streams they will choose,~~ **regardless of chosen stream** will complete a minimum of ~~55~~ **56** units, including all of

CHEM 121 - General Chemistry and Laboratory I (4)
CHEM 122 - General Chemistry II (2)
CHEM 126 - General Chemistry Laboratory II (2)
EASC 101 - Dynamic Earth (3)
EASC 201 - Stratigraphy and Sedimentation (3)
EASC 202 - Introduction to Mineralogy (3)
EASC 204 - Structural Geology I (3)
EASC 205 - Introduction to Petrology (3)
EASC 206 - Field Geology I ~~(2)~~ **(3)**
EASC 207 - Introduction to Applied Geophysics (3)
EASC 208 - Introduction to Geochemistry (3)
EASC 209W - Environmental Geoscience (4)
EASC 210 - Evolving Earth (3)
MATH 151 - Calculus I (3) or MATH 150 - Calculus I with Review (4)
MATH 152 - Calculus II (3)

and one of

STAT 201 - Statistics for the Life Sciences (3)
STAT 270 - Introduction to Probability and Statistics (3)

all of

PHYS 101 - Physics for the Life Sciences I (3) **
PHYS 102 - Physics for the Life Sciences II (3) **
PHYS 132 - Physics Laboratory I (1) **
PHYS 133 - Physics Laboratory II (1) **

or all of

PHYS 120 - Mechanics and Modern Physics (3)
PHYS 121 - Optics, Electricity and Magnetism (3)
PHYS 132 - Physics Laboratory I (1)
PHYS 133 - Physics Laboratory II (1)

or all of

PHYS 125 - Mechanics and Special Relativity (3)
PHYS 126 - Electricity, Magnetism and Light (3)
PHYS 132 - Physics Laboratory I (1)
PHYS 133 - Physics Laboratory II (1)

or both of

PHYS 140 - Studio Physics - Mechanics and Modern Physics (4)
PHYS 141 - Studio Physics - Optics, Electricity and Magnetism (4)

** Students are encouraged to complete the standard stream (PHYS 120, 121, 132, 133) or the advanced stream (PHYS 125, 126, 132, 133). Students may also choose to complete the studio physics stream (PHYS 140, 141). Students who complete the life sciences stream (PHYS 101, 102, 130) (which has a corequisite of BISC 100 or 101 or 102) with a minimum B grade should have sufficient preparation for the major program.

Upper Division Requirements

Students will complete 60 units minimum of 300 and 400 division EASC or related courses that are approved by the department. Students are encouraged to select upper division elective courses in consultation with an academic advisor, as EGBC has specific groupings of elective courses for each stream, respectively.

Geology Stream

Students who choose this stream will complete a minimum of ~~48~~ **51** units, including

all of

EASC 301 - Igneous Petrology (3)
EASC 302 - Sedimentary Petrology (3)
EASC 305 - Quantitative Methods for the Earth Sciences (3)
EASC 306 - Field Geology II (3)
EASC 308 - Field Geology III (3)
EASC 309 - Global Tectonics (3)
EASC 310W - Paleontology (3)
EASC 311 - Metamorphic Petrology (3)
EASC 498 - Undergraduate Research 1 (3)
EASC 499 - Honours Thesis (6)

~~and at least 1 of~~

~~EASC 302 - Sedimentary Petrology (3)~~
~~EASC 311 - Metamorphic Petrology (3)~~

and at least one of

EASC 304 - Hydrogeology (3)
EASC 313 - Introduction to Soil and Rock Engineering (3)
EASC 403 - Quaternary Geology (3)

and at least ~~21~~ **15** units (with a minimum of ~~18~~ **12** units from EASC) chosen from

EASC 300 - Selected Topics in Earth Sciences (3)
~~EASC 302 - Sedimentary Petrology (3)~~
EASC 304 - Hydrogeology (3)
~~EASC 305 - Quantitative Methods for the Earth Sciences (3)~~
EASC 307 - Applied Geophysics (3)
~~EASC 311 - Metamorphic Petrology (3)~~
EASC 312 - Stratigraphy (3)
EASC 313 - Introduction to Soil and Rock Engineering (3)
EASC 314 - Principles of Glaciology (3)
EASC 315W - Geochemistry of Natural Waters (3)
EASC 317 - Global Geophysics (3)
EASC 400 - Selected Topics in Earth Sciences (3)
EASC 401 - Mineral Deposits (3)
EASC 402 - Sedimentology (3)
EASC 403 - Quaternary Geology (3)
EASC 404 - Structural Geology II (3)
EASC 405 - Water, Environment, and Climate Change (3)
EASC 408 - Regional Geology of Western Canada (3)
EASC 410 - Groundwater Contamination and Transport (3)
EASC 411 - Terrain Analysis (3)

EASC 413 - Engineering Geology and Resource Geotechnics (3)
EASC 415 - Groundwater Modelling (3)
EASC 416 - Field and Lab Techniques in Hydrogeology (3)
EASC 420 - ~~Petroleum Geology~~ **Energy Geosystems** (3)
EASC 421 - Volcanology (3)
EASC 491 - Directed Readings (1) *
EASC 492 - Directed Readings (2) *
EASC 493 - Directed Readings (3) *
GEOG 311 - Hydrology (4)
GEOG 313 - River Geomorphology (4)
GEOG 355 - Geographical Information Science II (4)
REM 334 - Earth's Past Climates (4)
REM 445 - Environmental Risk Assessment (4)
REM 446 - Environmental and Social Impact Assessment (4)
SCI 301 - Science Communication: An Introduction (3)

provided the courses have not been used in any of the course groupings listed above.

Environmental Geoscience Stream

Students who choose this stream will complete a minimum of ~~48~~ **51** units, including

all of

EASC 304 - Hydrogeology (3)
EASC 305 - Quantitative Methods for the Earth Sciences (3)
EASC 306 - Field Geology II (3)
EASC 308 - Field Geology III (3)
EASC 313 - Introduction to Soil and Rock Engineering (3)
EASC 315W - Geochemistry of Natural Waters (3)
EASC 403 - Quaternary Geology (3)
EASC 498 - Undergraduate Research 1 (3)
EASC 499 - Honours Thesis (6)

and at least 1 of

EASC 301 - Igneous Petrology (3)
EASC 302 - Sedimentary Petrology (3)
EASC 309 - Global Tectonics (3)
EASC 310W - Paleontology (3)

and at least ~~21~~ **18** units (with a minimum of ~~15~~ **12** units from EASC) chosen from

EASC 300 - Selected Topics in Earth Sciences (3)
EASC 301 - Igneous Petrology (3)

EASC 302 - Sedimentary Petrology (3)
~~EASC 305 - Quantitative Methods for the Earth Sciences (3)~~
EASC 307 - Applied Geophysics (3)
EASC 309 - Global Tectonics (3)
EASC 310W - Paleontology (3)
EASC 311 - Metamorphic Petrology (3)
EASC 312 - Stratigraphy (3)
EASC 314 - Principles of Glaciology (3)
EASC 317 - Global Geophysics (3)
EASC 400 - Selected Topics in Earth Sciences (3)
EASC 401 - Mineral Deposits (3)
EASC 402 - Sedimentology (3)
EASC 404 - Structural Geology II (3)
EASC 405 - Water, Environment, and Climate Change (3)
EASC 408 - Regional Geology of Western Canada (3)
EASC 410 - Groundwater Contamination and Transport (3)
EASC 411 - Terrain Analysis (3)
EASC 413 - Engineering Geology and Resource Geotechnics (3)
EASC 415 - Groundwater Modelling (3)
EASC 416 - Field and Lab Techniques in Hydrogeology (3)
EASC 420 - ~~Petroleum Geology~~ **Energy Geosystems** (3)
EASC 421 - Volcanology (3)
EASC 491 - Directed Readings (1) *
EASC 492 - Directed Readings (2) *
EASC 493 - Directed Readings (3) *
GEOG 311 - Hydrology (4)
GEOG 313 - River Geomorphology (4)
GEOG 355 - Geographical Information Science II (4)
REM 334 - Earth's Past Climates (4)
REM 445 - Environmental Risk Assessment (4)
REM 446 - Environmental and Social Impact Assessment (4)
SCI 301 - Science Communication: An Introduction (3)

provided the courses have not been used in any of the course groupings listed above.

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

PROGRAM MODIFICATION TEMPLATE

Name of Program or Name of Faculty Molecular Biology and Biochemistry in the Faculty of Science
Rationale for change: Three new courses (MBB 445, MBB 447 and MBB 478) have been created in MBB. All three of them need to be included in the options list for graduation requirements for the MBB majors and MBB honours programs, while two of them (MBB 447 and MBB 478) need to be included in the concentration in Infection and Immunity.
Effective term and year: Fall 2023
The following program(s) will be affected by these changes: Molecular Biology and Biochemistry Major Molecular Biology and Biochemistry Honours Concentration in Infection and Immunity

Calendar Change: "to" and "from" sections are not required. All deletions should be crossed out as follows: ~~sample.~~ All additions should be marked by a **bold.**

Molecular Biology and Biochemistry Major [...] Program Requirements [...] Upper Division Requirements […] and a minimum of six courses chosen from the following list, three of which must be 400-level courses. There is no upper limit on the quantity in this list that can be completed. HSCI 442 - Immunology Laboratory (4) MBB 323 - Introduction to Physical Biochemistry (3) MBB 324 - Protein Biochemistry (3) MBB 326 - Introduction to the Immune System (3) MBB 328 - Introduction to Microbial Pathogenesis (3) MBB 342 - Introductory Genomics and Bioinformatics (3) MBB 402 - Developmental Biology of Cell Signalling (3) MBB 420 - Selected Topics in Contemporary Biochemistry (3) MBB 421 - Nucleic Acids (3) MBB 422 - Biomembranes (3)

MBB 423 - Protein Structure and Function (3)
MBB 424 - Membrane Transport Mechanisms (3)
MBB 427 - Immune Responses in Health and Disease (3)
MBB 429 - RNA-mediated Gene Regulation (3)
MBB 430 - Mechanisms of Secretory Transport (3)
MBB 431 - Cells and the Environment (3)
MBB 432 - Advanced Molecular Biology Techniques (4)
MBB 433 - Epithelial Cell Biology (3)
MBB 436 - Gene Expression (3)
MBB 438 - Human Molecular Genetics (3)
MBB 440 - Selected Topics in Contemporary Molecular Biology (3)
MBB 441 - Bioinformatics (3)
MBB 443 - Protein Biogenesis and Degradation (3)
MBB 445 - Advanced Microbial Pathogenesis (3)
MBB 446 - The Molecular Biology of Cancer (3)
MBB 447 - Stem Cells - Current Trends (3)
MBB 460 – Selected Topics in Bioinformatics and Genomics (3)
MBB 461 - Comparative Genomics (3)
MBB 462 - Human Genomics (3)
MBB 463 - Forensic Genomics (3)
MBB 464 - From Genome to System (3)
MBB 465- Cancer Genomics (3)
MBB 478 - Molecular Epidemiology of Infectious Diseases (3)

Concentration in Infection and Immunity

Students who choose this concentration will complete all of

MBB 308 – Molecular Biology Laboratory (3)
MBB 309W - Biochemistry Laboratory (4)
MBB 321-Intermediary Metabolism (3)
MBB 322 - Molecular Physiology (3)
MBB 324 - Protein Biochemistry (3)
MBB~~/HSCI~~ 326 - Introduction to the Immune System (3)
MBB 328 - Introduction to Microbial Pathogenesis (3)
MBB 331 - Molecular Biology (4)
MBB 342 - Introductory Genomics and Bioinformatics (3)

and two of
MBB~~/HSCI~~ 427 - Immune Responses in Health and Disease (3)
MBB 445 - Advanced Microbial Pathogenesis (3)
MBB~~/HSCI~~ 478 - Molecular Epidemiology of Infectious Disease (3)

and a minimum of four courses chosen from the following list, two of which must be MBB courses. There is no upper limit on the number of courses that can be completed from this list but students will only receive credit for each course once.

BISC 303 - Microbiology Lab course (3)
HSCI 338 - Animal Virology (3)
HSCI 441 - Virology Lab (4)
HSCI 442 - Immunology Laboratory (4)
HSCI 477 - Seminar in Vaccine Immunology (3)
HSCI 482 - Seminar in Infectious Disease (3)
MBB 402 - Developmental Biology of Cell Signalling (3)
MBB 422 - Biomembranes (3)
MBB 423 - Protein Structure and Function (3)
MBB 427 - Immune Responses in Health and Disease (3)
MBB 430 - Mechanisms of Secretory Transport (3)
MBB 432 - Advanced Molecular Biology Techniques (4)
MBB 438 - Human Molecular Genetics (3)
MBB 441 - Bioinformatics (3)
MBB 445 – Advanced Microbial Pathogenesis (3)
MBB 446 - The Molecular Biology of Cancer (3)
MBB 447 – Stem Cells – Current Trends (3)
MBB 461 - Comparative Genomics (3)
MBB 462 - Human Genomics (3)
MBB~~/HSCI~~ 478 Molecular Epidemiology of Infectious Diseases (3)

Molecular Biology and Biochemistry Honours
[...]
Program Requirements
[...]
Upper Division Requirements
[…]
and a minimum of six courses chosen from the following list, three of which must be 400-level courses. There is no upper limit on the quantity in this list that can be completed.

HSCI 442 – Immunology Laboratory (4)
MBB 323 - Introduction to Physical Biochemistry (3)
MBB 324 - Protein Biochemistry (3)
MBB 326 - Introduction to the Immune System (3)
MBB 328 - Introduction to Microbial Pathogenesis (3)
MBB 342 - Introductory Genomics and Bioinformatics (3)
MBB 402 - Developmental Biology of Cell Signalling (3)
MBB 420 - Selected Topics in Contemporary Biochemistry (3)
MBB 421 - Nucleic Acids (3)

MBB 422 - Biomembranes (3)
MBB 423 - Protein Structure and Function (3)
MBB 424 - Membrane Transport Mechanisms (3)
MBB 427 - Immune Responses in Health and Disease (3)
MBB 429 - RNA-mediated Gene Regulation (3)
MBB 430 - Mechanisms of Secretory Transport (3)
MBB 431 - Cells and the Environment (3)
MBB 432 - Advanced Molecular Biology Techniques (4)
MBB 433 - Epithelial Cell Biology (3)
MBB 436 - Gene Expression (3)
MBB 438 - Human Molecular Genetics (3)
MBB 440 - Selected Topics in Contemporary Molecular Biology (3)
MBB 441 - Bioinformatics (3)
MBB 443 - Protein Biogenesis and Degradation (3)
MBB 445 - Advanced Microbial Pathogenesis (3)
MBB 446 - The Molecular Biology of Cancer (3)
MBB 447 - Stem Cells - Current Trends (3)
MBB 460 – Selected Topics in Bioinformatics and Genomics (3)
MBB 461 - Comparative Genomics (3)
MBB 462 - Human Genomics (3)
MBB 463 - Forensic Genomics (3)
MBB 464 - From Genome to System (3)
MBB 465- Cancer Genomics (3)
MBB 478 - Molecular Epidemiology of Infectious Diseases (3)

and one additional upper division course from any department in the Faculty of Science (including MBB)

and either all of the following, which are taken in a single term (option A)

MBB 481 - Directed Research - Honours Thesis (5)
MBB 482 - Directed Research - Honours Research Performance (5)
MBB 483 - Directed Research - Honours Thesis Defense (5)

or both of the following, to be taken in two consecutive terms (option B)
MBB 491 - Directed Research I (5)
MBB 492 - Directed Research II (10)

Students are required to complete additional upper division units to total a minimum of 60 upper division units.

Concentration in Infection and Immunity

Students who choose this concentration will complete all of

MBB 308 – Molecular Biology Laboratory (3)
MBB 309W - Biochemistry Laboratory (4)
MBB 321-Intermediary Metabolism (3)
MBB 322 - Molecular Physiology (3)
MBB 324 - Protein Biochemistry (3)
MBB~~/HSCI~~ 326 - Introduction to the Immune System (3)
MBB 328 - Introduction to Microbial Pathogenesis (3)
MBB 331 - Molecular Biology (4)
MBB 342 - Introductory Genomics and Bioinformatics (3)

and two of

MBB~~/HSCI~~ 427 - Immune Responses in Health and Disease (3)
MBB 445 - Advanced Microbial Pathogenesis (3)
MBB~~/HSCI~~ 478-- Molecular Epidemiology of Infectious Disease (3)

and a minimum of four courses chosen from the following list, two of which must be MBB courses. There is no upper limit on the number of courses that can be completed from this list but students will only receive credit for each course once.

BISC 303 - Microbiology Lab course (3)
HSCI 338 - Animal Virology (3)
HSCI 441 - Virology Lab (4)
HSCI 442 - Immunology Laboratory (4)
HSCI 477 - Seminar in Vaccine Immunology (3)
HSCI 482 - Seminar in Infectious Disease (3)
MBB 402 - Developmental Biology of Cell Signalling (3)
MBB 422 - Biomembranes (3)
MBB 423 - Protein Structure and Function (3)
MBB 427 - Immune Responses in Health and Disease (3)
MBB 430 - Mechanisms of Secretory Transport (3)
MBB 432 - Advanced Molecular Biology Techniques (4)
MBB 438 - Human Molecular Genetics (3)
MBB 441 - Bioinformatics (3)
MBB 445 – Advanced Microbial Pathogenesis (3)
MBB 446 - The Molecular Biology of Cancer (3)
MBB 447 – Stem Cells – Current Trends (3)
MBB 461 - Comparative Genomics (3)
MBB 462 - Human Genomics (3)
MBB~~/HSCI~~ 478 Molecular Epidemiology of Infectious Diseases (3)

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