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MEMORANDUM

ATTENTION Senate
FROM Paul Kingsbury, Vice-Chair
RE: Senate Committee on Undergraduate Studies
Course Changes (SCUS 24-101)

DATE December 6, 2024
PAGES 1/2

For information:

Acting under delegated authority at its meeting of December 5, 2024 SCUS approved the following curriculum revisions effective Fall 2025.

a. Faculty of Applied Sciences

1. School of Computing Science

(i) Description changes for CMPT 363

2. School of Engineering Science

(i) Equivalent statement changes for ENSC 453, 470, 475, 488, and 495

b. Beedie School of Business

(i) Deletion of BUS 316
(ii) Description and prerequisite changes for BUS 312
(iii) Prerequisite changes for BUS 410, and 418
(iv) Title, description and prerequisite changes for BUS 419
(v) Equivalent statement changes for BUS 414

~~**c. Faculty of Communication, Art and Technology**~~ Removed - submitted in error; Senate informed March 3, 2025

~~1. School for the Contemporary Arts~~

~~(i) Title, description, and prerequisite change for CA 170, 171, and 374~~
~~(ii) Course number and equivalent statement change for CA 174~~
~~(iii) Title, units, description, and prerequisite change for CA 270, 271, 370, 371, 375, 470, and 471~~

d. Faculty of Environment

1. Department of Archaeology

(i) Title, description and prerequisite change for ARCH 382

e. Faculty of Science

1. Department of Molecular Biology and Biochemistry

(i) Title and description change for MBB 421
(ii) Title, description and prerequisite change for MBB 423

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.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT CMPT **NUMBER** 363 **TITLE** User Interface Design (3)

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☐
Title	☐	Description	☒	Equivalent Statement	☐

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

~~This course provides a comprehensive study of user interface design. Topics include: goals and principles of UI design (systems engineering and human factors), historical perspective, current paradigms (widget-based, mental model, graphic design, ergonomics, metaphor, constructivist/iterative approach, and visual languages) and their evaluation, existing tools and packages (dialogue models, event-based systems, prototyping), future paradigms, and the social impact of UI.~~
Builds on the fundamental concepts of Human-Computer Interaction (HCI) and user interface design taught in the prerequisite course (CMPT 263), including usability and iterative user-centered design. The teaching format is studio-based, where students acquire hands-on experience by engaging in term-long projects on designing, implementing, and evaluating interactive computer systems. Students apply HCI concepts to real-world scenarios while exploring advanced and specialized topics such as emerging interaction paradigms, human-AI interaction, ubiquitous computing, the social impact of HCI, and inclusive design. Prerequisite: CMPT 225 and CMPT 263, both with a minimum grade of C-.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

Starting Summer 2024, we are now offering a new course CMPT 263 (Intro. to Human-Centered Computing) which is intended to introduce some of the technical content previously covered in CMPT 363. Thus, we will adjust the content of CMPT 363 to revisit, reinforce, and build upon the technical content through hands-on group projects in a studio-style setting. Students will learn how to apply iterative design for real-world problems and have more time to explore and develop their project ideas using advanced HCI techniques.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	ENSC	NUMBER	453	TITLE	Programming for Heterogeneous Computing Systems

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☐
Title	☐	Description	☐	Equivalent Statement	☒

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

The computing industry has been actively exploring specialized and programmable hardware accelerators, such as GPUs and FPGAs, to bring orders-of-magnitude performance and energy gains for important application domains. This course covers fundamental concepts, designs, and programming of heterogeneous computing systems, including multicore CPUs, GPUs, and FPGAs. Prerequisite: ENSC 350 and ENSC 351, both with a minimum grade of C-. Students with credit for ENSC 462 under the title "Programming for Heterogeneous Computing Systems", ENSC 845 or ENSC 894 under the title "Programming for Heterogeneous Computing Systems" may not take this course for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

This course is now cross-listed with ENSC 845 which was the previous special topics course under the title "Programming for Heterogeneous Computing Systems".

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	ENSC	NUMBER	470	TITLE	Optical and Laser Engineering Applications

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☐
Title	☐	Description	☐	Equivalent Statement	☒

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

A practical, hands-on introduction to optical engineering and lasers. Covers the concepts of light, optics (geometric optics, Gaussian optics, multiple optical elements, lens aberrations), laser concepts, operational details of major laser types, laser interactions with optical systems, laser applications in engineering and medicine, complex optical system design and fiber optics. Labs cover optical systems, lasers measurements, optical CAD design, holography. Prerequisite: Completion of 80 units including (PHYS 121 or 126 or 141) and (MATH 260 or MATH 310), with a minimum grade of C-. Students with credit for ENSC 871 or ENSC 894 under the title "Optical Engineering and Laser Applications" may not take this course for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

This course is now cross-listed with ENSC 871 which is a new course for the previous special topics course under the title "Optical Engineering and Laser Applications".

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT ENSC **NUMBER** 475 **TITLE** Biomedical Instrumentation

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☐
Title	☐	Description	☐	Equivalent Statement	☒

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

Instrumentation techniques for measuring common physiological signals. Bioelectric and biochemical sensors. Biostimulation. Electronic design issues: electrical safety, signal conditioning and protection against noise, digital signal acquisition. Live subject ethical considerations. Laboratory work to include use of data acquisition packages in conjunction with various sensors, as well as design and construction of a full signal acquisition chain, from sensor to RAM.
Prerequisite: (ENSC 225 or MSE 251), ENSC 320, (ENSC 380 or MSE 280), all with a minimum grade of C- and a minimum of 80 units. ENSC 380/MSE 280 can be taken concurrently. Students with credit for ENSC 372, ENSC 875 or ENSC 895 under the title "Biomedical Instrumentation" cannot take this course for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

This course is now cross-listed with ENSC875 which is the new course offering for a previous special topics course title "Biomedical Instrumentation".

COURSE SUBJECT ENSC **NUMBER** 488 **TITLE** Introduction to Robotics

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☐
Title	☐	Description	☐	Equivalent Statement	☒

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

Fundamentals of robotics: mathematical representation of kinematics, dynamics and compliance. Planning and execution of robot trajectories. Feedback from the environment: use of sensors and machine vision. A brief introduction to robot languages. Different application domains for manipulator robots, e.g., assembly, manufacturing, etc. Prerequisite: (ENSC 230 or ENSC 386) and (ENSC 383 or MSE 381), all with a minimum grade of C- and 80 units. Students with credit for ENSC 884 or ENSC 894 under the title "Introduction to Robotics" may not take this course for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

This course is now cross-listed with ENSC884 which was the previous special topics course under the title "Programming for Heterogeneous Computing Systems".

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT	ENSC	NUMBER	495	TITLE	Introduction to Microelectronic Fabrication

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☐
Title	☐	Description	☐	Equivalent Statement	☒

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

Lectures provide the theory of integrated circuit fabrication. Students fabricate diodes, transistors and test structures in the laboratory. Topics: clean room practice, thermal oxidation and diffusion, photolithography, thin film deposition, etching, ion implantation, packaging, CMOS and bipolar processes.
Prerequisite: ENSC 225 or MSE 251 or PHYS 365 or SEE 231, with a minimum grade of C- and permission of the instructor and a minimum of 80 units.
Enrollment in this course is by application only. Students with credit for ENSC 851 may not take this course for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

ENSC495 is cross-listed with ENSC851.

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SENATE COMMITTEE ON UNDERGRADUATE STUDIES

EXISTING COURSE DELETION FORM

COURSE SUBJECT BUS **NUMBER** 316 **TITLE** Derivative Securities (3)

RATIONALE (must be included)

Since derivative securities are a type of investment instrument, it would be more appropriate to include this content in BUS 315. Understanding the fundamentals of derivative securities is sufficient for students to progress to advanced finance courses. We do not need to keep BUS 316 as those who wish to explore the topic in greater depth can take BUS 419.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (enter in textbox) Fall 2025

PLEASE DO THE FOLLOWING:

1. Attach a program impact list along with your course deletion form. Contact the Senate and Academic Services Office (sfucal@sfu.ca) for a program impact list.
2. Once you have the program impact list, please review how deleting this course affects each program's requirements.
3. If more substantial changes are required to programs as a result of this deletion, please also submit a program modification form.
4. If no further changes other than deletion is required in program requirements, please list those programs in the box below:

Program impact list for BUS 316:
1. Business Honours
2. Business Major

*obtained July 9, 2024

5. Lastly, please conduct a course impact analysis, which reviews the effect of a course number change and/or course deletion on course prerequisites. For instructions on how to do a course impact analysis, please visit our page and click on "deleting a course" and review Step 2. Course Impact Analysis.

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT BUS **NUMBER** 312 **TITLE** Introduction to Finance (3)

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☒
Title	☐	Description	☒	Equivalent Statement	☐

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

~~Role and function of financial managers, financial analysis, compound interest valuation and capital budgeting, management of current assets, introduction to financial instruments and institutions.~~ An introduction to basic and fundamental concepts in finance. Topics may include: financial statements analysis, Time Value of Money, Investment decisions and capital budgeting, Income and equity securities and markets, Risk and Return, Asset pricing models, Capital market efficiency, Capital structure. Prerequisite: BUS 254 and (BUS 232 or ECON 233 or STAT 270 or STAT 271), both with a minimum grade of C- and 45 units. OR actuarial science students with BUS 254 and (BUS 232 or ECON 233 or STAT 270 or STAT 271), both with a minimum grade of C- and 45 units. Recommended: BUS 207 or ECON 201. Quantitative.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

BUS 312 is designed to provide fundamental finance knowledge for non-finance majors and to lay a solid foundation for finance majors to pursue more advanced courses. We cover topics that best serve these purposes, including risk and return and asset pricing models, which require a basic understanding of statistics. Therefore, having BUS 232/ECON233/STAT 270/STAT 271 as a prerequisite is in the best interest of the students.

COURSE SUBJECT BUS **NUMBER** 410 **TITLE** Financial Institutions (3)

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☒
Title	☐	Description	☐	Equivalent Statement	☐

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

An examination of financial institutions and the markets in which they operate. Topics may include: institutional structure, financial contract forms, valuation and pricing relationships, financial intermediation, financial transacting, the regulatory environment, risk measurement and hedging strategies. Prerequisite: BUS 315, ~~316,~~ and BUS 360W, ~~all~~ both with a minimum grade of C-; 60 units.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

BUS 315 includes the basics of derivative securities, so we can drop BUS 316 as prerequisite.

COURSE SUBJECT	BUS	NUMBER	418	TITLE	International Financial Management (3)

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☒
Title	☐	Description	☐	Equivalent Statement	☐

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

An introduction to international financial markets and institutions and to the management of assets and liabilities in an international/multinational setting. Topics to be covered include: exchange rate determination and management of foreign exchange risk; interest rate swaps; international portfolio management; comparative markets; and country risk. Prerequisite: BUS 315, ~~316~~ (BUS 316 or BUS 313), BUS 360W, all with a minimum grade of C-; 60 units.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

Students gain basic corporate finance knowledge in BUS 313, which serves as a foundation to learn multinational corporation management in BUS 418. Since BUS 315 has already included basics of derivative securities, we plan to drop BUS 316 as prerequisite when students with BUS 316 have moved through the program.

COURSE SUBJECT	BUS	NUMBER	419	TITLE	Advanced Derivative Securities (3)

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☒
Title	☒	Description	☒	Equivalent Statement	☐

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

BUS 419 - ~~Advanced~~ Derivative Securities (3)

~~This is a second course in derivative securities. Topics may include: extensions of the Black-Scholes model, pricing of American options, interest rate derivatives, complex derivatives and real options.~~ Examines the valuation models and trading strategies for forward, futures, option and swap contracts. Students can expect to learn how to use these derivative securities for risk management, investment management and return enhancement. The course develops practical skills and methods for immediate use in the financial industry. Prerequisite: BUS 315~~, 316~~, and BUS 360W, ~~all~~ both with a minimum grade of C-; 60 units. Students who have taken BUS 493 under the topic Advanced Derivative Securities may not take BUS 419 for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

BUS 315 covers the basics of derivative securities, while BUS 419 delves deeper into the subject. Combining the original BUS 316 and BUS 419, this course focuses on pricing derivative securities, risk management, and trading strategies using derivatives. It provides a comprehensive understanding of derivative securities.

COURSE SUBJECT BUS **NUMBER** 414 **TITLE** Real Estate Investments (3)

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☐
Title	☐	Description	☐	Equivalent Statement	☒

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

This course provides a broad overview of the real estate field. We will investigate all aspects of real estate investment decisions, including property valuation and management, financing choices, and market cycles. The main goal of the course is to offer you a foundation for a career in the real estate industry. Prerequisite: BUS 315, BUS 360W, both with a minimum grade of C-; 60 units. Students with credit for BUS 490, BUS 491, BUS 492, BUS 493, BUS 494, or BUS 495 when offered as Real Estate Finance may not take this course for further credit.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

Calendar edits to include "BUS" prefix before course numbers.

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT ARCH **NUMBER** 382 **TITLE** Lithic Technology

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☒
Title	☒	Description	☒	Equivalent Statement	☐

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

Title: ~~Lithic Technology~~

New Title: **Stone Tool Technology**

Description: ~~An in-depth study of how to manufacture and analyze stone tools. Includes rock and mineral identification, stone working by students, fracture mechanics, and relevance to theoretical problems. Prerequisite: ARCH 282 or 372. Students with credit for ARCH 485 may not take this course for further credit.~~

New Description: **An in-depth study of types of stone tools and how they were manufactured and used throughout world prehistory. Includes identifying stone tool raw materials, fracture mechanics, analyzing stone tools, and theoretical approaches to understanding their functions and roles in the past. Students receive hands-on experience making stone tools. Prerequisite: ARCH 282. Students with credit for ARCH 485 may not take this course for further credit.**

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

The new title clarifies the course content for students who may not be familiar with the terminology. The revised description provides further clarity and a note that students are expected to make their own stone tools. The prerequisite change is a consequence of the course number made a few years back, where ARCH 372 (Material Culture Analysis) became ARCH 282 (Material Culture Analysis). As we no longer offer ARCH 372, and have not for the past few years, it is no longer a prerequisite option.

SFU SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT MBB **NUMBER** 421 **TITLE** Nucleic Acids

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☐
Title	☒	Description	☒	Equivalent Statement	☐

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

MBB 421 Nucleic Acids and Biotechnology (3)

Contemporary molecular biology examining ~~Recent literature is examined for insights into~~ the structure and properties of DNA and RNA, ~~drawing on a variety of biochemical, chemical and molecular biological perspectives.~~ and the use of nucleic acids in research, pharmaceutical, and industrial applications. Fundamental DNA biology and CRISPR technology and related topics will be discussed.
Prerequisite: MBB 331 with a minimum grade of C.

EFFECTIVE TERM AND YEAR FOR CHANGES
Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

This course has been redesigned to incorporate the advancements made in the field of nucleic acid biotechnology. With the structure and properties of DNA and RNA at the foundation, the updates made to this course will incorporate new technologies and avenues of research that simply did not exist before. The applications listed in the new course description will enhance this course and appeal to a larger number of students.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE MODIFICATION FORM

COURSE SUBJECT MBB **NUMBER** 423 **TITLE** Protein Structure and Function

TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):

Course number	☐	Units	☐	Prerequisite	☒
Title	☒	Description	☒	Equivalent Statement	☐

WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using ~~strike through~~, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).

MBB 423 ~~Protein Structure and Function~~ Proteins in Human Health (3)

Mechanistic principles for how protein molecules achieve diverse functions such as chemical catalysis and conformational switching in the context of human health will be explored. Students will learn to critique hypotheses about structural mechanisms, and to interpret the primary literature reporting on structural evidence from X-ray diffraction and spectroscopy. Prerequisite: MBB 331 ~~MBB 323 or MBB 324~~, with a minimum grade of C.

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall 2025

RATIONALE (must be included)

This course has been redesigned to investigate the mechanistic principles of proteins in the context of human disease. A discussion of proteins related to human health and their roles in processes such as hemostasis, blood sugar level, nervous system function, toxins and drugs, has been carefully curated to bring new energy and curiosity to the structure and function of proteins.