

SFU Engineering Science – **BIOMEDICAL OPTION**
Concentrations: -Biomedical Signals & Instrumentation
 -Rehabilitation & Assistive Devices

YEAR 1			
TERM 1, FALL	TERM 2, SPRING	SUMMER	
CHEM 121-4 General Chemistry & Lab CMPT 128-3 Intro to Computing Science & Programming for Engineers ENSC 100W-3 Engineering Society & Technology ENSC 101W-1 Writing Process, Persuasion, & Presentations MATH 151-3 Calculus I – or MATH 150 PHYS 120-3 Modern Physics & Mechanics	ENSC 102-1 Form, Style, & Professional Genres ENSC 150-3 Intro to Computer Design MATH 152-3 Calculus II MATH 232-3 Elementary Linear Algebra PHYS 121-3 Optics, Electricity, & Magnetism PHYS 131-2 General Physics Lab Cmpl I First Complementary Elective		
YEAR 2			
TERM 3, FALL	SPRING Co-op Term	TERM 4, SUMMER	
CHEM 180-3 The Chemistry of Life CMPT 225-3 Data Structures & Programming ENSC 215-3 Microcontroller/Assembly Prgrm ENSC 220-3 Electronic Circuits I MATH 251-3 Calculus III MATH 310-3 Intro to Ord. Differential Equations		ENSC 204-1 Graphical Communication for Engineering ENSC 225-4 Microelectronics ENSC 250-3 Intro to Computer Architecture ENSC 320-3 Electric Circuits II BPK 208-3 Intro to Physiological Systems MATH 254-3 Vector & Complex Analysis	
YEAR 3			
FALL Co-op Term	TERM 5, SPRING	SUMMER Co-op Term	TERM 6, FALL
	ENSC 304-1 Human Factors & Usability Engineering ENSC 330-4 Engineering Materials ENSC 370-3 Biomedical Eng.Directions ENSC 380-3 Linear Systems BPK 201-3 Biomechanics MACM 316-3 Numerical Methods PHYS 321-3 Intermediate Electricty & Magnetism		ENSC 383-4 Feedback Control Systems BPK 308-3 Experiments & Models in Physiology STAT 270-3 Intro to Probability & Stats ENSC 3 or 4XX First Engineering Sci Elective Scie I First Science Elective
YEAR 4			
TERM 7, SPRING	SUMMER	TERM 8, FALL	
ENSC 305-1 Project Documentation & Team Dynamics ENSC 350-3 Digital Systems Design ENSC 372-4 Biomedical Instrumentation ENSC 406-2 Social Responsibility & Professional Practice ENSC 440-4 Capstone Engineering Sci Project ENSC 3 or 4XX Second Engineering Science Elective		ENSC 201-3 The Business of Engineering Cmpl II Second Complementary Elective ENSC 4XX-4 Third Engineering Science Elective ENSC 4XX-4 Fourth Engineering Science Elective Scie II Second Science Elective	
Additional Requirements: ENSC 498-3 Engineering Science Thesis Proposal ENSC 499-9 Engineering Science Undergraduate Thesis			

ENSC Electives

Biomedical Signals and Instrumentation Concentration

Two of the four science electives must come from this list:

- ENSC 425-4 Electronic Systems Design
- ENSC 429-4 Digital Signal Processing
- ENSC 474-4 Digital/Medical Image Processing
- ENSC 476-4 Biophotonics

Rehabilitation and Assistive Devices Concentration

Students should consider completing the following Science elective:

- BPK 448-3 Rehabilitation & Movement Control

Students should consider completing the following Engineering Science electives:

- ENSC 387-4 Intro to Electro-Mechanical Sensors & Actuators
- ENSC 429-4 Digital Signal Processing
- ENSC 472-4 Rehabilitation Engineering