BASc in Electrical Engineering, Option in Biomedical Engineering

Students must select electives according in the following categories:

Breadth electives (at least 8 credits)
Biomedical Engineering advanced electives (at least 6 credits)
Free electives (at least 3 credits)

Biomedical Engineering Breadth Electives (at least 8 credits)

To be chosen from the following list.

Course	Credits	Course Title
CPEN 311/*EECE 353*	4	Digital Systems Design
ELEC 315 /*EECE352*	4	Electronic Materials & Devices
ELEC 331 /*EECE 358*	4	Computer Communications
EECE 359	4	Signals & Communications
ELEC 342 /*EECE 373*	4	Electro-mechanical Energy Conversion & Transmission

Biomedical Engineering Advanced Electives (at least 6 credits)

To be chosen from the following list. ==**Only one 200-level course from this list will be allowed as an elective, and only if it is used as a prerequisite for a 300-level or 400-level elective**== from the following list that is completed as part of this program. If a course has been applied to a previous degree then it is ineligible as a technical elective.

Course	Credits	Course Title
BMEG 310	3	Introduction to Bioinformatics (*4 credits of biology may be used to satisfy the BMEG 245 pre-req*)
CPEN 333 /*EECE 314*	3	Systems Software Engineering
CPEN 411 /*EECE476*	4	Computer Architecture
CPEN 412 /*EECE465*	4	Microcomputer Systems Design
ELEC 401 /*EECE488*	3	Analog CMOS Integrated Circuit Design
ELEC 402 /*EECE479*	4	Introduction to VLSI Systems
ELEC 403 /*EECE481*	3	Digital Integrated Circuit Design
ELEC 411 /*EECE483*	3	Antennas & Propagation
ELEC 412 /*EECE482*	3	Optical Waveguides & Photonics
ELEC 413 /*EECE484*	3	Semiconductor Lasers
ELEC 415 /*EECE480*	3	Semiconductor Devices: Physics, Design and Analysis
ELEC 421 /*EECE466*	3	Digital Signal Processing Systems
ELEC 431 /*EECE453*	3	Communication Systems
ELEC 432 /*EECE454*	3	Digital Communications
ELEC 433 /*EECE455*	3	Error Control Coding for Communications and Computers
ELEC 434 /*EECE452*	3	Introduction to Optical Networks
ELEC 441 /*EECE460*	3	Control Systems
ELEC 442 /*EECE487*	3	Introduction to Robotics
ELEC 451 /*EECE493*	4	Power Electronics
ELEC 452 /*EECE495*	3	Industrial Drives
ELEC 453 /*EECE458*	4	Power Systems Analysis I
ELEC 454 /*EECE459*	4	Power Systems Analysis II
ELEC 455 /*EECE497*	3	Power Systems Protection
ELEC 456 /*EECE499*	3	Decision Support Methods in Power Systems Operation
ELEC 457 /*EECE498*	3	Optimization of Power Systems
ELEC 461 /*EECE401*	3	Nanotechnology in Electronics
ELEC 462 /*EECE402*	3	Sensors & Actuators in Microsystems
ELEC 463 /*EECE403*	3	Micro/Nano Fabrication and Instrumentation Lab

ELEC 464 */EECE404*	3	Nanotechnology & Nature
ELEC 465 */EECE489*	3	Microsystems Design
ELEC 472 */EECE424*	3	Biomechantronics
ELEC 474 */EECE435*	3	Biophotonics
ELEC 499 */EECE496*	3	Undergraduate Thesis
BIOC 202	3	Introductory Medical Biochemistry
BIOC 302	3	General Biochemistry
BIOC 303	3	Molecular Biochemistry
BIOL 201	3	Introduction to Biochemistry
CHEM 203	4	Introduction to Organic Chemistry
CHEM 205	3	Physical Chemistry
CHEM 233	3	Organic Chemistry for the Biological Sciences
MATH 361	3	Introduction to Mathematical Biology
MTRL 495	3	Biomaterials
PHYS 404	3	Introduction to Medical Physics

ELEC/CPEN 400 courses may count as advanced electives. Please seek approval from ECE Student Services before planning your courses.

Not all courses will be available to students in Applied Science and others may have prerequisites that are obtained only through the Applied Science pre-med alternative path. Also, given that some Third Year courses have multiple 2XX level prerequisites in this list, not all of the listed Technical Electives can be combined together for credit in the option. Students will need to consult the UBC calendar to verify admissibility, space, prerequisites and eligibility in this option to choose which courses in this list to take to receive credit.

Free Electives (3 credits)

Free electives can be chosen from courses offered across the university.