

## Faculty of Kinesiology **BIOMECHANICS (BSc)**

*It is the responsibility of the student to ensure graduation requirements are met per the [Academic Calendar](#)*

### **UNITS    CORE REQUIREMENTS (54 UNITS)**

|   |          |   |
|---|----------|---|
| 3 | KNES 201 | Activity: Essence and Experience  |
| 3 | KNES 203 | Activity: Health, Fitness, and Performance  |
| 3 | KNES 213 | Introduction to Research in Kinesiology   |
| 3 | KNES 237 | Introduction to Nutrition   |
| 3 | KNES 244 | Introduction to Socio-Cultural Aspects of Sport   |
| 3 | KNES 251 | Introduction to Motor Control and Learning  |
| 3 | KNES 253 | Introduction to Exercise and Sport Psychology   |
| 3 | KNES 259 | Human Anatomy and Physiology I  |
| 3 | KNES 260 | Human Anatomy and Physiology II   |
| 3 | KNES 263 | Quantitative Biomechanics   |
| 3 | KNES 323 | Integrative Human Physiology  |
| 3 | KNES 344 | Gender, Sexuality and Sport   |
| 3 | One of:  | KNES 351 Foundations of Neural Control of Movement,    KNES 397 Health and Exercise Psychology, or    KNES 399 Sport Psychology |
| 3 | KNES 355 | Human Growth and Development  |
| 3 | KNES 363 | Biomechanics of Biological Materials  |
| 3 | KNES 372 | Foundations of Sport Medicine   |
| 3 | KNES 373 | Exercise Physiology   |
| 3 | One of:  | STAT 205 Intro to Statistical Inquiry or    STAT 213 Intro to Statistics I  |

### **BIOMECHANICS MAJOR REQUIREMENTS (36 UNITS)**

|     |          |  |
|-----|----------|--|
| 3   | MATH 211 | Linear Methods I   |
| 3   | MATH 275 | Calculus for Engineers and Scientists  |
| 3   | MATH 277 | Multivariable Calculus for Engineers and Scientists  |
| 3   | ENGG 201 | Behaviours of Liquids, Gases, and Solids   |
| 3   | ENGG 202 | Engineering Statics  |
| 3   | ENGG 311 | Engineering Thermodynamics   |
| 3   | ENME 317 | Mechanics of Deformable Solids I   |
| 3   | ENGG 349 | Dynamics   |
| 1.5 | KNES 393 | Research Seminar I   |
| 1.5 | KNES 395 | Research Seminar II  |
| 3   | KNES 463 | Advanced Techniques in Biomechanics  |
| 6   | One of   | KNES 466A&B Biomechanics Research Project or <a href="#">KNES 490A&amp;B Honours Project</a> |

### **SENIOR KINESIOLOGY OPTIONS (12 UNITS)**

3 \_\_\_\_\_    3 \_\_\_\_\_    3 \_\_\_\_\_    3 \_\_\_\_\_

### **OPEN OPTIONS – Kinesiology or Non-Kinesiology, Junior or Senior (18 UNITS)**

3 \_\_\_\_\_    3 \_\_\_\_\_    3 \_\_\_\_\_

3 \_\_\_\_\_    3 \_\_\_\_\_    3 \_\_\_\_\_

### **IMPORTANT DEGREE CHECKS**

- A minimum of 60 units at the senior level are required. This means no more than 60 units of 200 level courses total.
- A maximum of 60 transfer units may be applied to the degree; a max of 27 units may be applied towards the core.
- A total of 120 units are required to complete the Kinesiology degree.

## Progression Plan for Biomechanics Students:

To ensure 4-year degree progression, the following courses should be taken according to the pattern below in order to avoid timetable conflicts in any given term or year. Unlisted requirements/options can be taken with greater flexibility. Please ensure the options you take align with the option space listed on page 1.

Disregarding this progression sequence will result in delayed graduation timeline and time conflicts.

| BMEC   | Fall   | Winter   |
|--------|--|--|
| YEAR 1 | KNES 259<br>MATH 211<br>MATH 275<br>PHYS 211 or OPTION<br>STAT 205/213 | KNES 201<br>ENGG 202<br>KNES 260<br>KNES 263<br>MATH 277 |

|        |  |  |
|--------|--|--|
| YEAR 2 | KNES 244<br>KNES 213<br>KNES 323<br>KNES 251<br>KNES 363 | ENGG 201<br>KNES 355<br>KNES 344<br>KNES 203<br>OPTION |
|--------|--|--|

|        |  |  |
|--------|--|--|
| YEAR 3 | KNES 393 (1.5 units)<br>ENGG 349<br>ENME 317<br>OPTION<br>OPTION | KNES 463<br>ENGG 311<br>KNES 253<br>KNES 373<br>OPTION<br>KNES 395 (1.5 units)** |
|--------|--|--|

\*\* Email [knesinfo@ucalgary.ca](mailto:knesinfo@ucalgary.ca) to request an enrolment of 16.5 units. Include your UCID, legal name and that you are a Biomechanics student.

|        |   |  |
|--------|---|--|
| YEAR 4 | KNES 466A OR 490A<br>KNES 372<br>KNES 237<br>399, 351, or Option*<br>OPTION | KNES 466B OR 490B<br>KNES 397 or Option*<br>OPTION<br>OPTION<br>OPTION |
|--------|---|--|

### Notes:

\* As per page 1, students need 1 of KNES 351, 397, or 399.

ENME 317, KNES 251, and KNES 372 all conflict and must be taken in separate fall terms.

Options must satisfy degree requirements. Refer to page 1 of program planner for clarification of Option requirements.