

## Course Syllabus

### **Biomechanics (Climbing) 5 Credits, First Cycle**

#### **Learning Outcomes**

Upon completion of the course, students will, at a basic level, be able to:

- describe forces, levers and torque moments in a static equilibrium system
- explain the size and direction of external forces, completed work, power development and moment of inertia during physical activity
- demonstrate the ability to analyse forms of movement based on biomechanical principles.

#### **Course Content**

The course highlights the external forces that affect an athlete during physical activity. Students will gain an understanding of internal muscle power development requirements and leverage needed by the muscles to overcome, resist or slow down a given external force. Skills in calculating size and direction of external forces, completed work, power development and moment of inertia will be developed. From a biomechanical perspective, students will perform motion analyses of athletes to describe their movements during activity.

#### **Assessment**

Assignment and oral examination.

#### **Grades**

The grading scale used for the final course grade is U–G.

Number of credits:

- Assignment, examination, 5 credits

Grades are reported as follows:

- Assignment, examination - 5 Credits | U–G

#### **Prerequisites**

General entry requirements

#### **Other Information**

The course is offered in collaboration with the Swedish Climbing Federation.

The course cannot be included in the same Dalarna University degree as Biomechanics (Powerlifting or Judo), 5 credits.

This course cannot be counted towards the same degree along with courses that have equivalent content.

If the student has received a decision/recommendation granting study support from Dalarna University because of a disability, then the examiner has the right to offer an alternative examination arrangement. The examiner takes into account the objectives in the course syllabus when deciding whether the examination can be adapted in accordance with the decision/recommendation.

**Subject:**

Sport and Health Science

**This course can be included in the following main field(s) of study:**

1. Sport and Health Science

**Progression Indicator within (each) main field of study:**

1. G1N

**Approved:**

Approved 23 February 2023

Valid from 23 February 2023