MECHANICS IN SPORTS
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TRACKS AND THIS COURSE
Tracks and this course is about expanding the students’ experience and competence in cross-disciplinary collaboration. In this course (TRA100/TRA105 – bachelor/master) within the theme Health and sports technology we welcome students from all programmes with relevant prerequisites.

COURSE CONTENTS
Basic concepts in mechanics and physics

Biomechanics

COURSE PREREQUISITES
• Basic courses in mechanics, dynamics and solid mechanics
• Courses in the finite element method, structural dynamics composite mechanics are meriting but not a requirement.

LEARNING OUTCOMES
• Be able to explain how basic concepts in mechanics and physics such power, friction, balance of forces total energy can be used to study athletic performance.
• Understand basic mechanical concepts of composite mechanics and how composite material characteristics can be beneficial in sports engineering.
• Understand basic mechanical concepts of loading rate-dependent (viscoelastic) materials and how they can be used for energy absorption in sports (impact, damping etc.)
• Discuss sources of common sports injuries, and how these can be mitigated or avoided.
• Be able to synthesize and apply knowledge, as specified in points above, to tackle or master problems with open solution spaces.

COURSE ENROLLMENT
Apply to the course no later than 1 June by sending an e-mail, including a motivation of your interest in the course, to: johan.davidsson@chalmers.se. Please also attach your course transcripts.
We aim at around 15 students (minimum 5) in balanced project groups with a mix of competences and back-grounds (master and bachelor). If the interest is high, there will be a selection of students based on their competence, interests and motivation. Interviews may be called upon.