ENGR 3023 BIOMECHANICS IN PRODUCT INNOVATION

Credit Points 10

Legacy Code 301292

Coordinator Karen Yevenes (https://directory.westernsydney.edu.au/search/name/Karen Yevenes/)

Description Designing optimal interactive environments for people requires an overview of human and contextual factors that impact on tasks and activities in the use of everyday products and services as well as specialised equipment. Students will complete a design challenge to improve product usability with healthy and rewarding outcomes for users through an evidence-based approach. Design challenges are completed with the input of specialist health and science resources with students applying knowledge in the areas of human anatomy, physics and the biomechanics of motion providing insights for new product innovation.

School Eng, Design & Built Env

Discipline Other Engineering And Related Technologies

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Equivalent Subjects ENGR 3010 Design Studio 4 Innovation through Systems Thinking

Assumed Knowledge

The ability to generate design concepts that reference human scale and basic knowledge in prototype model fabrication is desirable.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Define and explain the principles of biomechanics
2. Describe and illustrate examples of biomechanical principles in action as they apply a product design
3. Apply biomechanical principles as they relate to the description and analysis of motion
4. Develop an experiment to capture human forces and kinematic concepts related to a selected product design
5. Develop conceptual product designs that take advantage of applied biomechanical knowledge
6. Engage an iterative design discovery process and present a final design solution that improves product usability and user quality of life

Subject Content

1.Principles of biomechanics
2.Biomechanical principles in action in product design
3.Description and analysis of motion
4.Experiment Design and Measurement of forces and kinematics related to product design
5.Conceptual product design with applied biomechanical knowledge
6.Iterative design discovery process concluding in a final design solution

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/ Group Task
Observational Study	1,000 words with illustrations	20	N	Group
Research experiment and Conceptual Development	1,000 words (15%); 3 x A3 size annotated concept development (15%)	30	N	Individual
Report and Presentation	1,250 words (20%); Final proposal (20%) 7 minutes Presentation (10%)	50	N	Individual

Teaching Periods

Spring

Parramatta City - Macquarie St

Day

Subject Contact Karen Yevenes (https://directory.westernsydney.edu.au/search/name/Karen Yevenes/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ENGR3023_22-SPR_PC_D#subjects)