MECH 577 Optimum Design

Course Announcement

Fall 2008



The design process is, by its nature, open-ended, but once a candidate solution has been selected, the design problem becomes tractable with the tools of *optimization*. To help the engineer make the best decisions, optimization methods suitable to the most common problems encountered in engineering design will be studied and applied in this course. The course aims at developing skills in formulating a design task as an optimization problem. Skills include, additionally, the mastering of the methods of solution and interpreting the solutions in a design context. Issues such as cost, space-availability, and functionality will be studied. The final mark is computed based on: (a) three projects (75%) and (b) a final open-book quiz (25%), given the last day of lectures. A typical project consists of optimizing the shape of a component of a mechanical system, e.g., the links of the robot shown in the figure above. The optimum-design job should aim at minimizing the maximum von Mises stress, while being able to satisfy its structural functions.

Further information is available at

http://www.mcgill.ca/cden/courses/

You may also direct your queries to Prof. J. Angeles, McConnell 452: angeles@cim.mcgill.ca