BAKER COLLEGE
STUDENT LEARNING OUTCOMES
ME4850 Computer Aided Engineering (CAE) with SolidWorks

3 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Create part models for engineering applications.
    a. Develop geometry for analysis.
    b. Modify geometry for analysis.
    c. Post-process analysis results.
2. Develop Finite Element Analysis (FEA) process for models to inform design.
    a. Modify part geometry, characteristics, and process relative to analysis.
    b. Predict stress, strain and deformation for a given system.
    c. Recommend engineering direction based on FEA analysis.
    d. Recommend product or process modification based on analysis.
3. Interface model files with other systems and processes.
    a. Generate necessary file formats and documents including:
        i. Engineering reports
        ii. 2D plotting
        iii. 3D printer (STL)
        iv. Post processing
        v. CNC Machining (NC)
        vi. Translation / conversion
    b. Import native files and other file formats.
        i. Illustrations
        ii. Model files (point cloud, CMM, scan data)
4. Integrate advanced areas of application.
    a. Calculate beam and frame data based on analysis.

b. Develop thermal models for a given system.

c. Simulate shell models for a given system.

d. Investigate use of multibody dynamics and kinematics

e. Investigate optimization of product or process using CAE tools

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Effective: Fall 2020

These SLOs are not approved for experiential credit.