

Development of EDGD Website Automated Learning and Assessment Resources

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CONCEPT

Create review and assessment modules using an online platform available through the EDGD website (Figure 1).

- Free online service for EDGD members
- Graphics and visualization modules to increase the quality of student comprehension
- Collaborative collection of modules covering a variety of engineering topics

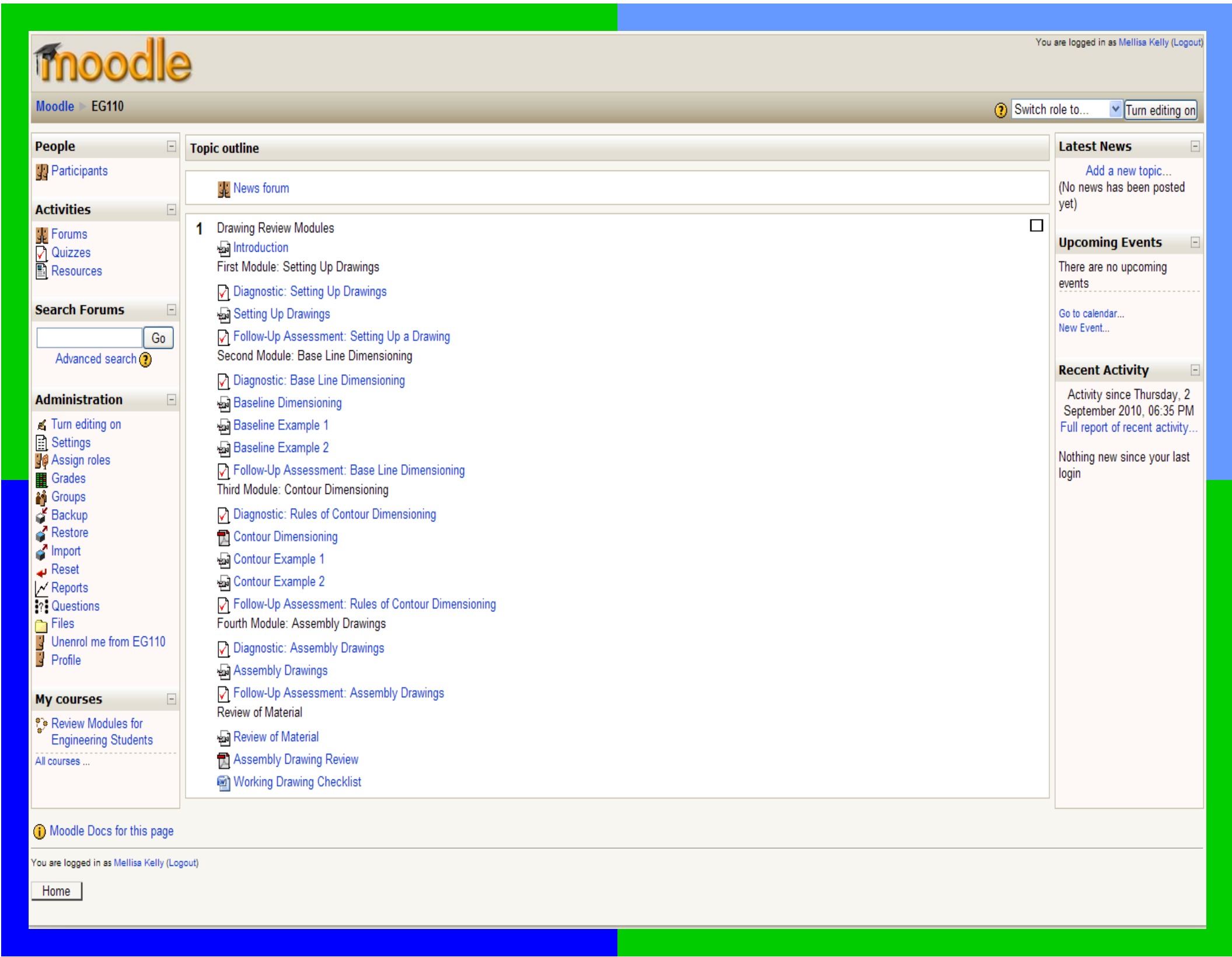


Figure 1. Screen Shot of Prototype Course

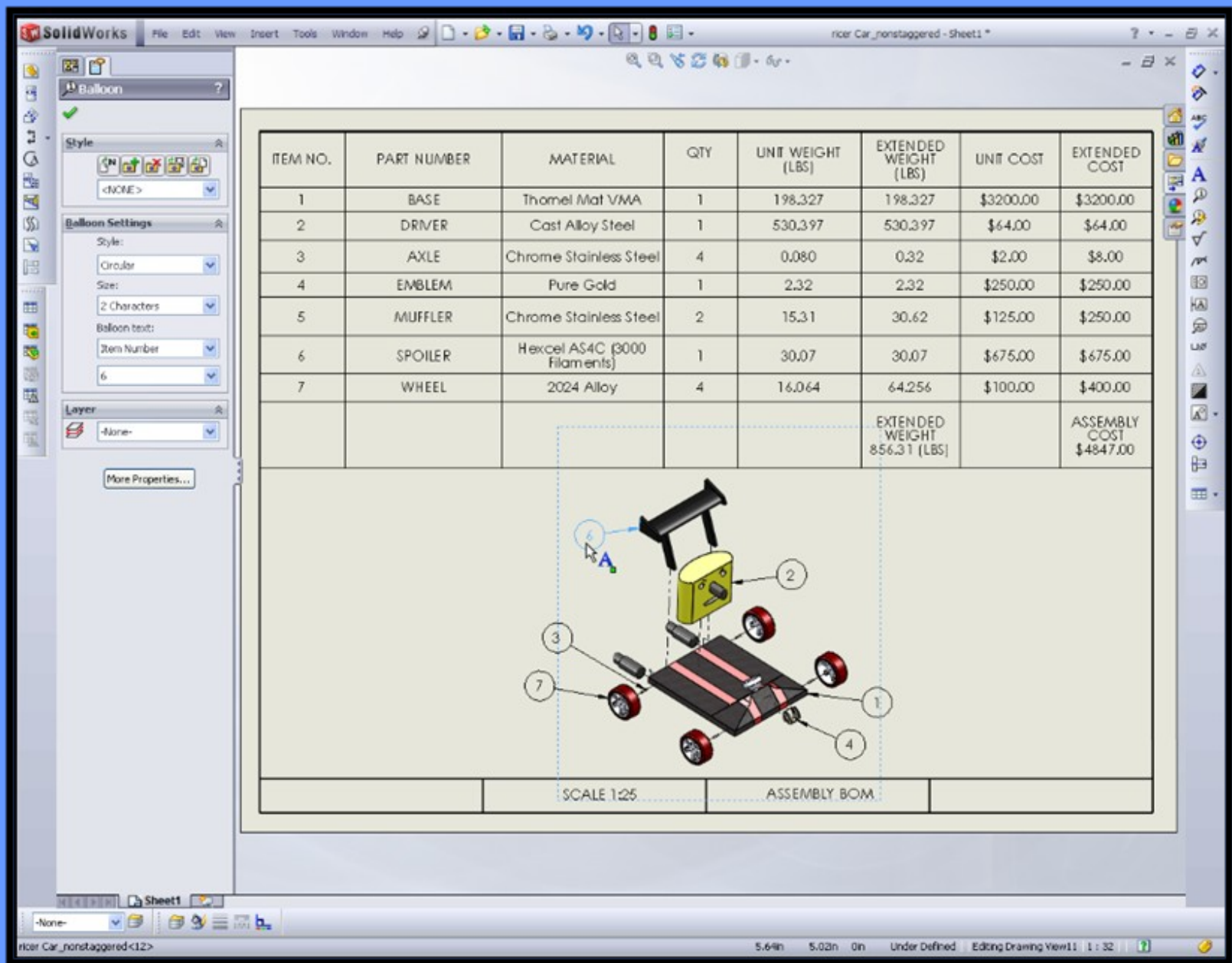


Figure 2. Screen Shot from Assembly Drawing Review Module

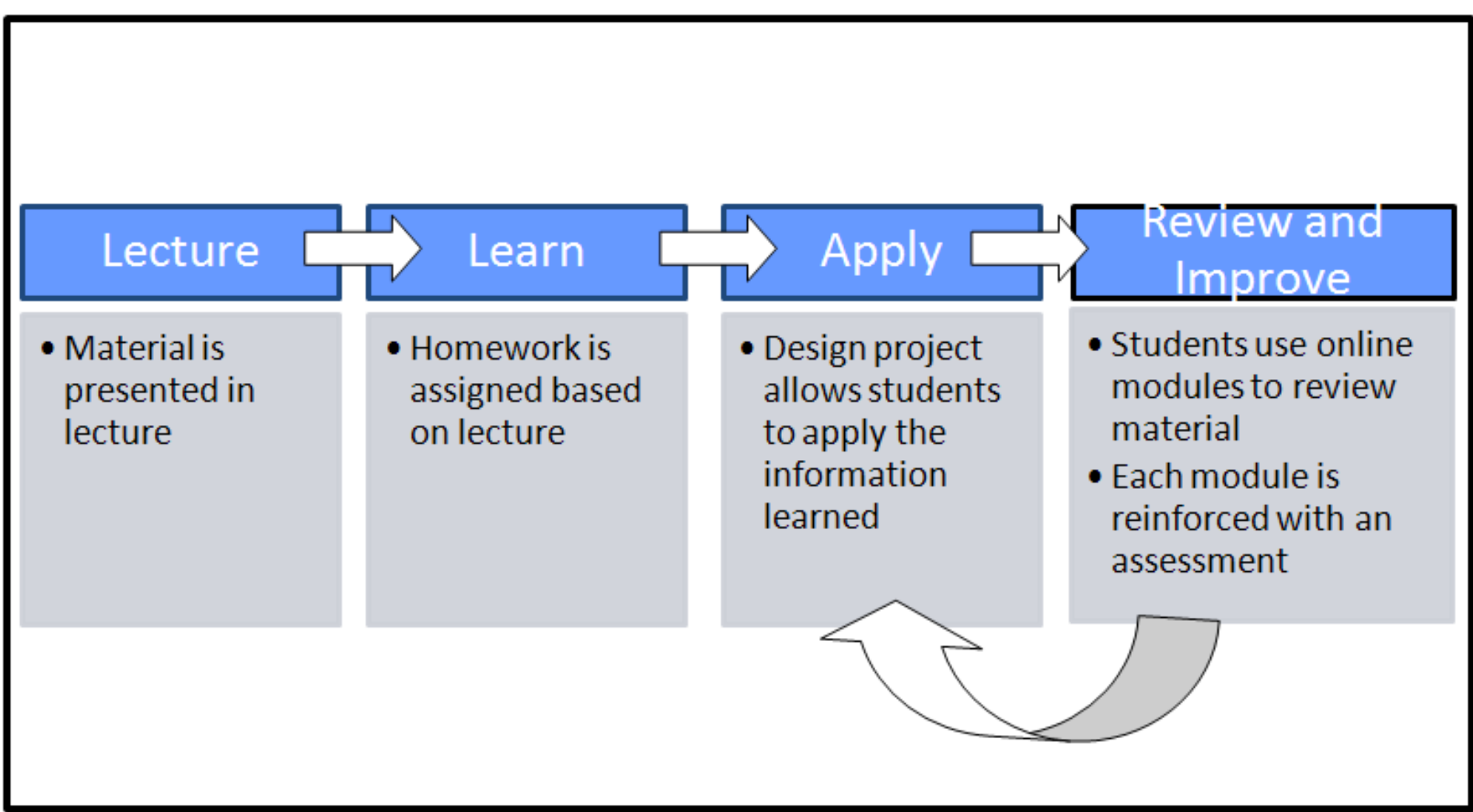


Figure 3. The Learning Process

AT DWC

Problem

- Students do a good job with the analysis and fabrication of their project physical prototypes, but final reports are of much poorer quality.

Solution

- All team members are required to watch a review module (Figure 2) and pass an online assessment before turning in their final reports.
- When tested using a working drawing module, improvements were seen after students used the modules and took the assessments. Figure 3 provides a visual representation of this process.

Due to its success at DWC, this module became the pilot course for the EDGD online learning and assessment resource database.

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USING MOODLE

- Modules and assessments were uploaded to Moodle
- Moodle quizzes allow for specific feedback based on the answer selected (Figures 4 and 5).
- Questions are randomly shuffled for each quiz

Figure 4. Sample Question with Feedback for Choice C

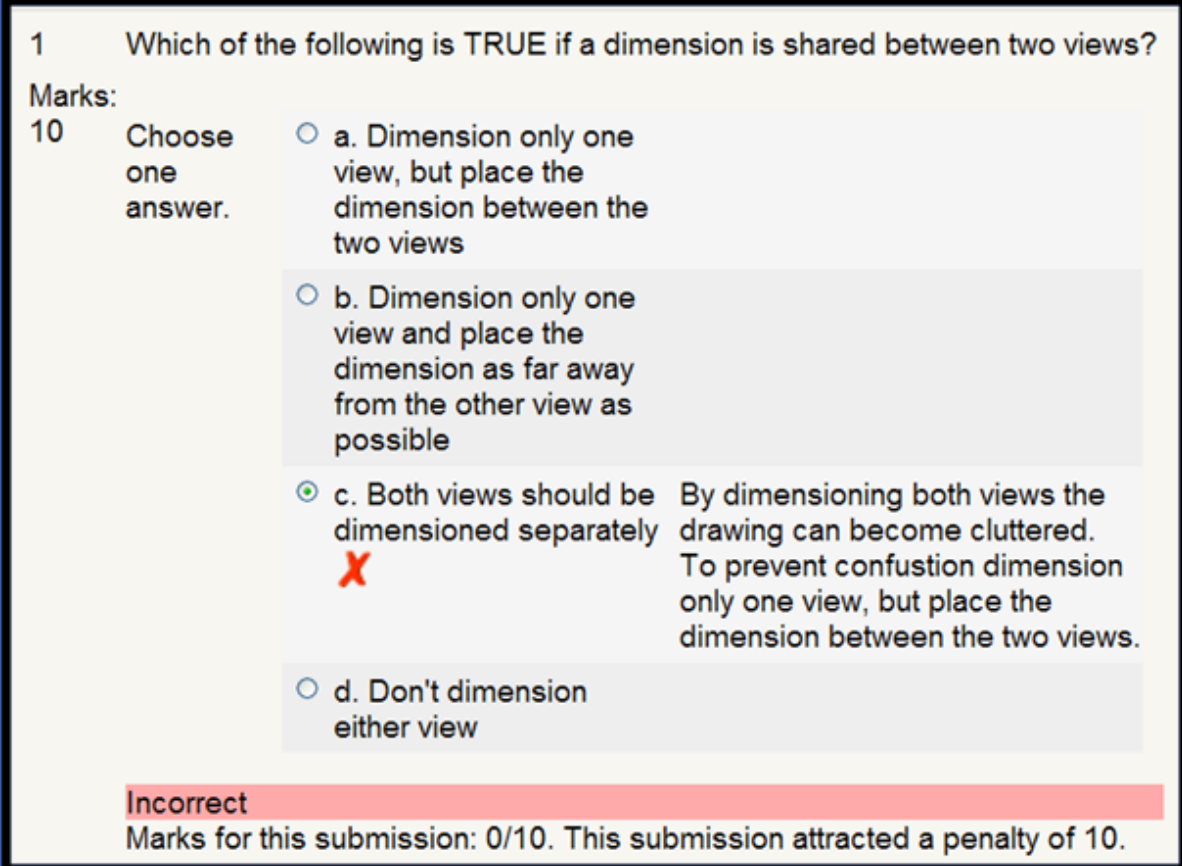
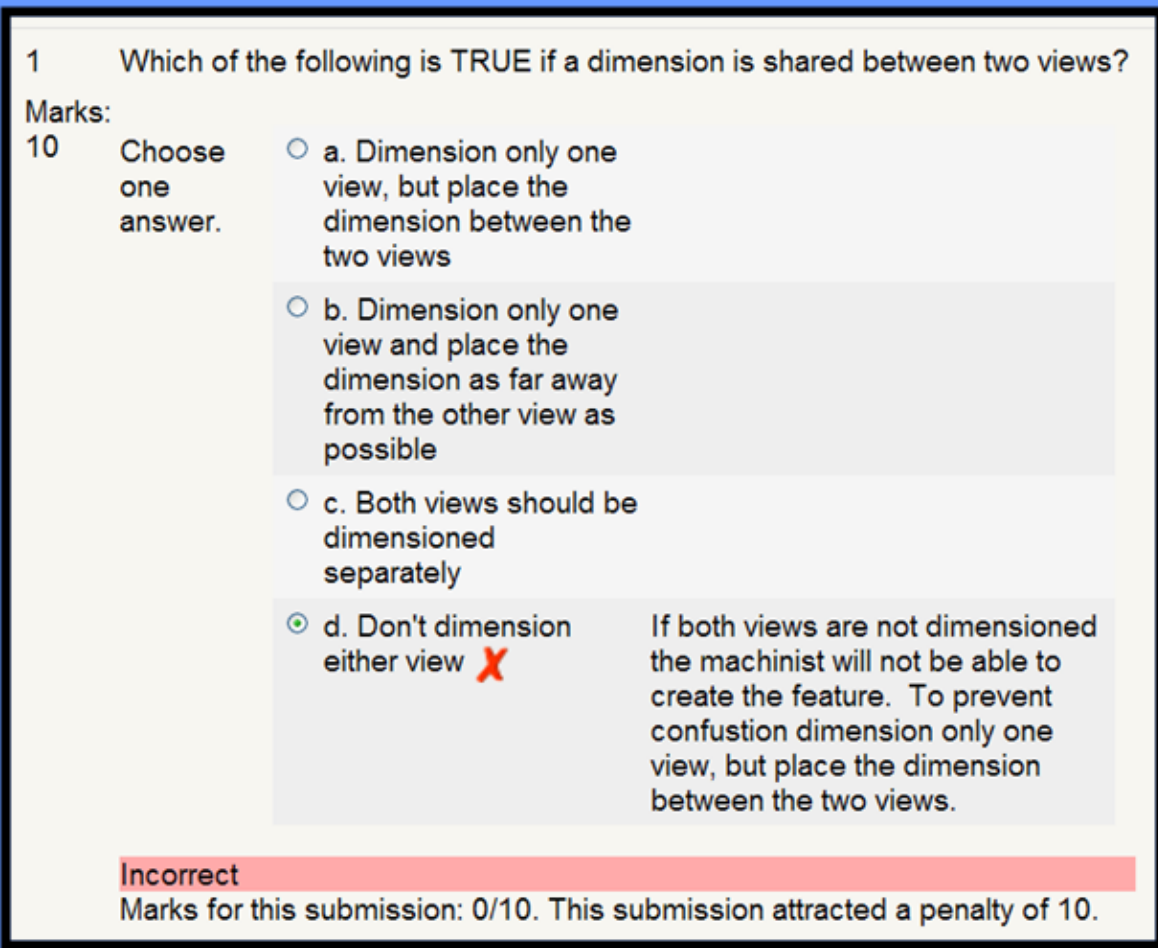


Figure 5. Sample Question with Feedback for Choice D



HOW DO I SIGN UP?

Signing up is easy! Simply request access and you will be provided with everything you need (Figure 6).

Why don't you join us?

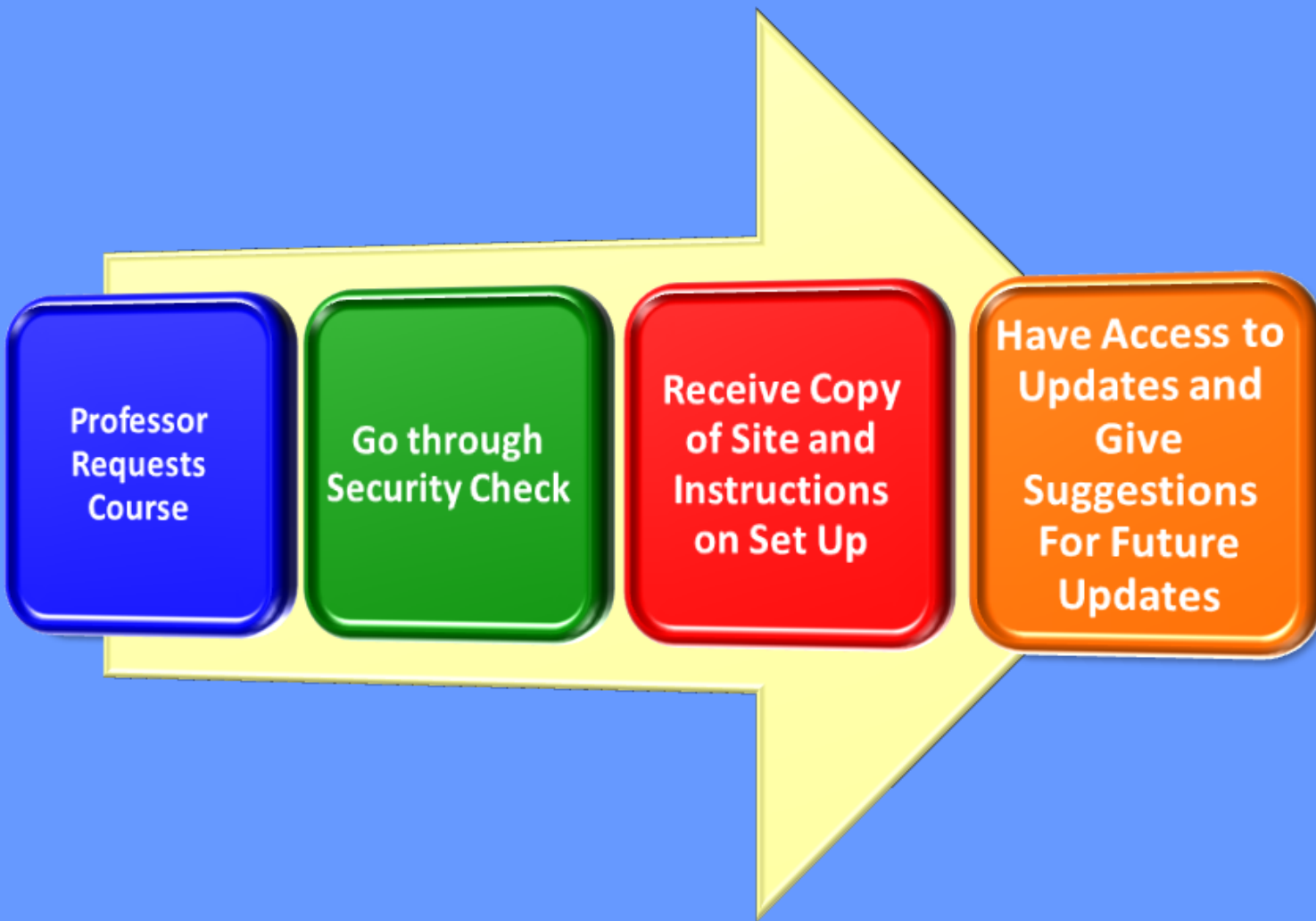


Figure 6. The Registration Process

Future Goals

- Fully automated registration process
- Broaden the topics to cover courses such as statics, dynamics, strength of materials, and fluid mechanics, and utilize the graphics and animation expertise in the EDGD (Figure 7) to provide high quality review modules
- Potentially use these modules as additional prerequisites for courses

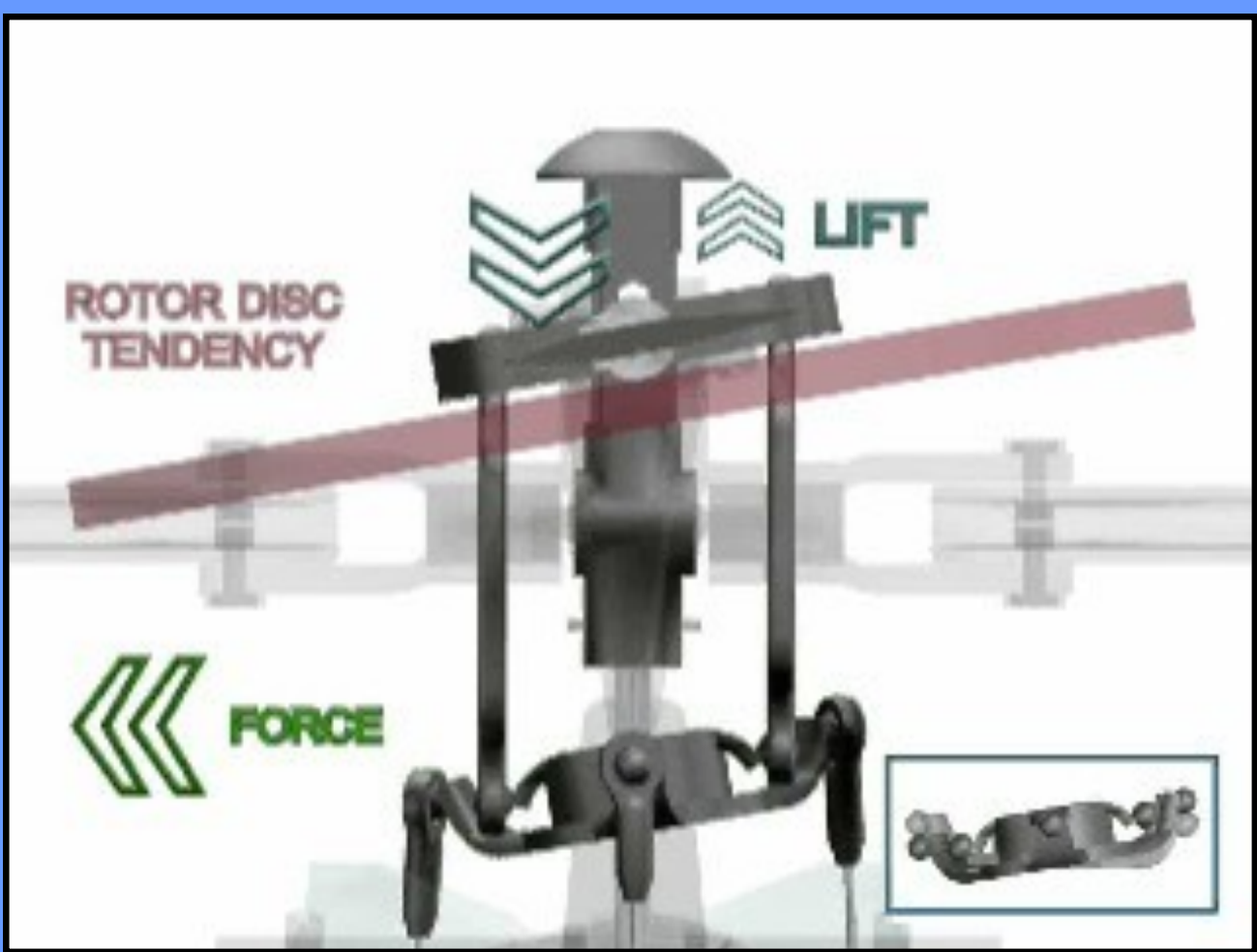


Figure 7. Helicopter Rotor Showing Mechanical Relationships and Effects of Rotor Tilt. Image provided by Dennis K. Lieu, Berkeley University