TRINE
UNIVERSITY

COURSE SYLLABUS

COURSE TITLE: Advanced Parametric Modeling **TERM & YEAR:** Fall 2021

COURSE NUMBER & SECTION NUMBER: EGR 453
F 9:00 am – 1:00 pm

COURSE DESCRIPTION: An advanced course which builds on the students existing knowledge of parametric modeling and studies advanced techniques using Unigraphics NX software and the application of these techniques in industry. In this course students will apply the knowledge obtained to generate models, detail drawings, and assemblies using industry standard parametric modeling software.

PREREQUISITES: ETD 263 – Design Analysis Proto -or- EGR 143 – Engineering Graphics

REQUIRED TEXT: **At least:** Tickoo, *NX 12 for Designers* (2018) CADCIM Technologies. (or one version older, or the newer versions of the text…if they exist,...any of these are fine)

REFERENCES: None required.

OTHER MATERIALS: Class handouts.

LEARNING OUTCOMES:

1. Generate effective datum planes, coordinate systems, and datum axes that allow for modeling complex objects and systems.
2. Create and design models that demonstrate solid techniques in parametric modeling.
3. Apply appropriate parametric techniques to effectively create and manage a set of working drawings.
4. Demonstrate the ability to modify models created in other software packages using synchronous modeling techniques.

ATTENDANCE/PARTICIPATION:

COVID-19 Attendance Policies:

- If you feel ill you **must not** physically attend class. Provided you adhere to the policies below, you will not be penalized for being physically absent from class due to illness.

- If you are experiencing flu-like symptoms, you should call the Health Center at 260-665-4585 to make an appointment to be screened.
- If you are physically absent from class for two consecutive scheduled class meeting times due to illness you should go to the health center or another health professional and provide your instructor with documentation.
- If you are physically absent from class for three scheduled class meeting times over the course of the semester due to illness, you should go to the health center or another health professional and provide your instructor with documentation.
- Any time you are physically absent from class due to illness, suspected illness, or quarantine, you should participate virtually by completing the assignments posted on Moodle. You may need to download the student edition for your computer here: https://trials.sw.siemens.com/nx-student-edition/
- If you are unable to participate virtually due to illness, you must provide your instructor with documentation for the absence to be excused.
- All University-sponsored activities (sporting events, field trips, etc.) are excused absences.

Class-specific Attendance Policies:

This is a hands-on laboratory course and attendance is expected at all lecture classes. There are lab days noted and attendance is not required during those times unless you have questions or prefer to learn together with another student in the lab. Your attendance record affects your grade in class. Each **three** absences will result in the lowering of your grade by one letter. If you miss a class it is your responsibility to get all notes and material that was handed out. Arrangements for ANY makeup work must be made in advance or you will receive a zero for the work.

GRADING/EVALUATION: Course grading components will be weighted as follows:

Homework and Class Assignments	50%
Tests & Quizzes	30%
Final Project	15%
Professional Conduct	5%

***** Any form of unprofessional conduct will not be tolerated. This may include but is not limited to: any form of disruptive talking in class, cheating, wasting class time, showing general disrespect and poor manners towards instructors and other students, making disapproving groans, sarcastic remarks or gestures, demanding grade changes or special favors, making hostile comments in class, or sending inappropriate e-mails. (this category will be a zero if any of these items happen even once)

Grades will be determined based on the following percentages:

A 94% and above
B+ 86 - 93% B
80 - 85%
C+ 76 - 79%
C 70 - 75%
D+ 66 - 69%
D 60 - 65%
F less than 60%

There will be no makeup quizzes, tests, assignments, projects, or presentations unless the student is excused for a university sponsored event.

Homework should be handed in or emailed prior to the beginning of class on the day that it is due. Late work will not be accepted. You **must** copy yourself on every email in order to validate the email was sent.

Files must be saved as noted by the assignment for full credit to be awarded.

You must have a USB flash drive or use Dropbox or Onedrive to back up your work. The Lab computers only allow temporary storage of files until they are rebooted. Lost work due to computer crashes or any other reason will not be an excuse which allows work to be turned in after the due date.

OTHER POLICIES:

ACADEMIC MISCONDUCT

The University prohibits all forms of academic misconduct. Academic misconduct refers to dishonesty in examinations (cheating), presenting the ideas or the writing of someone else as one's own (plagiarism) or knowingly furnishing false information to the University by forgery, alteration, or misuse of University documents, records, or identification. Academic dishonesty includes, but is not limited to, the following examples: permitting another student to plagiarize or cheat from one's own work, submitting an academic exercise (written work, printing, design, computer program) that has been prepared totally or in part by another, acquiring improper knowledge of the contents of an exam, using unauthorized material during an exam, submitting the same paper in two different courses without knowledge and consent of professors, or submitting a forged grade change slip or computer tampering. The faculty member has the authority to grant a failing grade in cases of academic misconduct as well as referring the case to Student Life.

SOCIAL DISTANCING, MASKING, AND OTHER CLASSROOM PROCEDURES

- For student safety and the safety of others, students must wear a mask that covers their mouth and nose. Students are expected to bring a mask with them to class every day.
- The University has a limited supply of disposable masks; if a student forgets their mask one may be available. However, if these supplies have been exhausted, students will be required to obtain their own mask before participating in class activities. Failure to do so may result in an unexcused absence.
- In face-to-face classes students and faculty should maintain six feet of distance from each other as often as possible. In classes and labs where group work is required, special attention should be paid to avoiding physical contact, the passing back and forth of physical objects, etc.
- As much as possible, objects should not be shared/passed among students.
- Buckets of sanitizing wipes will be available in each classroom; students should use these to sanitize their desk/work area before the beginning of class.

PLAGIARISM

You are expected to submit your own work and to identify any portion of work that has been borrowed from others in any form. An ignorant act of plagiarism on final versions and minor projects, such as attributing or citing inadequately, will be considered a failure to master an essential course skill and will result in an F for that assignment. A deliberate act of plagiarism, such as having someone else do your work, or submitting someone else's work as your own (e.g., from the Internet, fraternity file, etc., including homework and in-class exercises), will at least result in an F for that assignment and could result in an F for the course.

ELECTRONIC DEVICES

Use of electronic devices including smart watches and cell phones is prohibited during exams or quizzes unless directly allowed by the instructor.

DIGITAL MEDIA DEVICE MISUSE

Our learning environment, including classrooms and public lecture halls, should be free from disruptions from personal communication and media devices. In such settings, cell phones and all other such devices must be turned off. Camera cell phones must be turned off in locker rooms and other such private places.

ACADEMIC RESOURCES:

There are several academic services that may be useful to you during the semester along with the library and assistance with digital resources that can found in the University Center LINK.

The links to information here include:

- *Writing Center*:
- *Math Help Sessions*:
- *Study Sessions*:
- *Parent and Family Support and Parent Newsletter*:
- *Accessibility and Accommodations*:

They are accessible on one page at the following link:
https://www.trine.edu/academics/success/academic-support-services.aspx

COURSE CALENDAR/SCHEDULE:

The course calendar and schedule are posted in Moodle for your convenience. These are subject to change during the semester so please make sure to check Moodle each day prior to attending class for updates.

Main topics include the following:

1. Sketching and constraining
2. Modeling features
3. Modification of existing features
4. Assembly Modeling
5. Detail Drawings
6. Creating a FEA study on a part