



## SYLLABUS

SOUTHERN POLYTECHNIC COLLEGE OF ENGINEERING AND ENGINEERING TECHNOLOGY  
DEPARTMENT OF ENGINEERING TECHNOLOGY  
EDG 4111: SURFACE MODELING  
FALL 2021

### Course Information

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Class meeting time: Online (Content released Monday morning 8am)  
Modality and Location: Online Asynchronous  
Syllabus is posted in D2L

### Instructor Information

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Name: Randy Emert  
Email: remert@kennesaw.edu  
Office Location: Q226  
Office phone: 470-578-7406  
Office Hours: M-Th 11am-12pm  
Preferred method of communication: email

### Course Description

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This course covers surface modeling in 3D CAD, combining surface modeling, solid modeling, and creating master models. The student is introduced to complex solid modeling, freeform surface modeling, and surface analysis. Splines, curves, and three-dimensional sketches are used in conjunction with surfacing techniques to create shapes common to the automotive or aircraft industry. The shapes are analyzed for surface continuity to optimize designs.

### Course Materials

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Required Texts: Mastering Surface Modeling with Solidworks 2021  
ISBN: 978-1-63057-418-5

Technology requirements: Access to internet; Solidworks

### Learning Outcomes

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Students completing MET 2800 will have the ability to:

1. Create non-prismatic shapes using solid and surface modeling.
2. Analyze surfaces for continuity, wrinkles.
3. Create 3D Sketches.
4. Create 3D Curves and wire frames.
5. Apply surface modeling to engineering design.
6. Apply surfaces and solids to perform hybrid modeling techniques.

## Course Requirements and Assignments

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**Assignments:** There are a total of 19 assignments which account for 30% of your grade. Assignments are due Friday of each week. Due Dates are shown below and in D2L.

**Advanced Models:** Three advanced models are: Handle, Bezel, Bicycle Frame. Due Dates are shown below and in D2L.

**Design Projects:** There will be three grades for design projects: Hand grip, Racing Seat, and FSAE bodywork. Each of these projects will be given a minimum of 3-5 weeks to complete. A report will be required which requires the following: hand sketches, modeling strategy, modeling challenges, and CAD model. Due Dates are shown below and in D2L.

**Tests:** There will be two test grades. The CSWP- Surface Modeling certification test will be given for the midterm and the final. If passed for the midterm, you are exempt from taking the final. The grade for the test is typically a curved grade based on the performance of the class. If you do not pass the CSWP- Surface Modeling you can not get an A in the course. Due Dates shown in course schedule below.

### Content Availability:

All Lectures will be open from the first day of the class until the final day of the class.

All Assignments will be open from the first day until the due date.

All Advanced Models will be open from the first day until the due date.

All scheduled activities will be identified in D2L Announcements.

## Evaluation and Grading Policies

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Assignments	10%
Advanced Models	20%
Design Projects	30%
Tests	40%

Grades will be posted in D2L one week after their due date. Any discrepancies on grades must be identified through email, [remert@kennesaw.edu](mailto:remert@kennesaw.edu), within one week of being posted in D2L.

### GRADING SCALE:

90% - 100% A

80% - 89% B

70% - 79% C

60% - 69% D

0% - 59% F

Grades will be rounded up if they are  $>$  or  $= .5$  or above, for example, an 89.6 is an A, but 79.2 is a C.

## Course Policies

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Students are expected to turn in assignments on time. If you are unable to meet a deadline, send an email to [remert@kennesaw.edu](mailto:remert@kennesaw.edu) to document when you will complete the assignment. Communication is key. If you are aware of conflicts email early to notify me that class performance will be affected.

All due dates are listed in the Course Schedule below. If you are unable to meet the due dates due to extenuating circumstances, prior arrangements are required and must be documented through email at [remert@kennesaw.edu](mailto:remert@kennesaw.edu).

# Institutional Policies

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[Federal, BOR, & KSU Course Syllabus Policies](#)

## KSU Student Resources

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This link contains information on help and resources available to students: [KSU Student Resources for Course Syllabus](#)

## Course Delivery

KSU may shift the method of course delivery at any time during the semester in compliance with University System of Georgia health and safety guidelines. In this case, alternate teaching modalities that may be adopted include hyflex, hybrid, synchronous online, or asynchronous online instruction.

### COVID-19 illness

If you are feeling ill, please stay home and contact your health professional. In addition, please email your instructor to say you are missing class due to illness. Signs of COVID-19 illness include, but are not limited to, the following:

- Cough
- Fever of 100.4 or higher
- Runny nose or new sinus congestion
- Shortness of breath or difficulty breathing
- Chills
- Sore Throat
- New loss of taste and/or smell

COVID-19 vaccines are a critical tool in “Protecting the Nest.” If you have not already, you are strongly encouraged to get vaccinated immediately to advance the health and safety of our campus community. As an enrolled KSU student, you are eligible to receive the vaccine on campus. Please call (470) 578-6644 to schedule your vaccination appointment or you may walk into one of our student health clinics.

For more information regarding COVID-19 (including testing, vaccines, extended illness procedures and accommodations), see KSU’s official Covid-19 website.

### Face Coverings

Based on guidance from the University System of Georgia (USG), all vaccinated and unvaccinated individuals are encouraged to wear a face covering while inside campus facilities. Unvaccinated individuals are also strongly encouraged to continue to socially distance while inside campus facilities, when possible.

# Course Schedule

Week	Lecture/Assignment	Due Date
1	L1 Introduction to Surface Models	8/20
	A1 Solidworks Surfaces	
	A2 Splines	
2	L2 Splines and 3D Sketching	8/27
	A3 3D Sketch Chair	
3		9/3
	<b>DP1 Hand Grip Project Description: Due 9/24</b>	
	L3 Basic Surfacing 1	
	A4 Surfacing Basics	
	A5 Baffle	
4		9/10
	L4 Basic Surfacing 2	
	A6 Halyard	
	A7 Shoehorn	
5		9/17
	A8 Feather	
	A9 Chip	
6		9/24
	<b>DP2 Racing Seat: Due 10/22</b>	
	A10 Mouse	
	A11 Phone Case	
7		10/1
	A12 Remote	
	A13 Bottle	
8		10/8
	A14 Mask	
	A15 CH5 Catheter Handle	
9		10/15
	A16 CH5 Hand Grip	
	A17 Blended Corner	
10		10/22
	A18 CH6 Using Trim & Thicken – Modem Housing	
	A19 Catheter Housing	
11		10/29
	<b>DP3 FSAE Bodywork: Due 12/6</b>	
	<b>Midterm Exam: CSWP-Surface Modeling Certification Test</b>	
12		11/5
	AM1 Handle	
13		11/12
	AM2 Bezel	
14		11/19
	AM3 Bicycle Frame	
15		12/6
	Work on DP3 FSAE Bodywork	
	Prepare for CSWP-Surface Modeling Certification Test	
16		12/8
	<b>Final Exam: CSWP-Surface Modeling Certification Test</b>	

This syllabus including scheduling and grading may be modified based on mutual agreement of instructor and student.