PROCTECH 2CA3 Course Outline

COURSE INFORMATION			
Session Offered	FALL 2021		
Course Name	CAD For Design		
Course Code	PROCTECH 2CA3		
Course Description	Two-dimensional drafting: drawing environment and commands, drafting settings, drawing editing, plotting output, dimensioning, orthographic projections and views, sectional and auxiliary views. Three-dimensional solid modeling: parts, assemblies, 2D drawings generation.		
Instructor	Misara Elgammal	Email:	elgammm@mcmaster.ca
		C01 Lectures:	Wednesday 9:30 AM – 12:20 PM *Zoom Meeting ID to be posted on Avenue*
Textbooks	Enzo Bevilacqua, **Introduction to AutoCAD Exercise Manual** Paul Tran, **Solidworks 2018 Basic Tools**		
Optional Text	C. Jensen and J. Helsel, Interpreting Engineering Drawings		
Software	***AutoCAD Download*** – ***Download before Start of First Class*** https://www.autodesk.com/education/free-software/autocad ***SolidWorks 2020 Download*** – *Do Not Download 60 day Trial Version until Week 8* https://www.solidworks.com/sw/purchase/educator-evaulation-request.htm		
Supplies	**Purchase Drawing Compass and Ruler** – *Required from Week 5* **Print Grid Paper** – *Available on Avenue*		
Prerequisite(s)	Registration in level II or above of Automation Engineering Technology		

COURSE EVALUATION - OVERVIEW	WEIGHT
Drawing: *10 classes – 1% each – For each Exercise, Submit One Image of Final Work*	10%
AutoCAD Exercises: *6 classes – 5% each* *For each Exercise, Submit Two Images of Work in Progress and One Image of Final Work*	30%
SolidWorks Exercises: *5 classes – 5% each* *For each Exercise, Submit an Image of Each Sketch and Final 3D Work*	25%
AutoCAD Test – *Submit Two Images of Work in Progress and One Image of Final Work*	10%
SolidWorks Test – *Submit an Image of Each Sketch and Final 3D File*	10%
Final Exam: *On Drawing Portion Only – Submit One Image of Final Work for each question*	15%
TOTAL	**100%**

TOPICS	
Week 1 Sept. 8th	**Course Introduction (9:30 – 10:00 AM)** • Review Course Outline **Orthographic Projection (10:00 – 10:45 AM)** • Exercise 16 to Exercise 23 **AutoCAD (10:45 AM – 12:20 PM)** • AutoCAD Exercise 1: Abutment Block *(Quick)* • AutoCAD Exercise 2: Adjustable Baseplate *(Quick)* • AutoCAD Exercise 3: Punch Plate
Week 2 Sept. 15th	**Orthographic Projection (9:30 – 10:30 AM)** • Exercise 24 to Exercise 30 **AutoCAD (10:30 AM – 12:20 PM)** • AutoCAD Exercise 4: Tapering Plate
Week 3 Sept. 22nd	**Orthographic Projection (9:30 – 10:30 AM)** • Exercise 31 to Exercise 35 **AutoCAD (10:30 AM – 12:20 PM)** • AutoCAD Exercise 5: Fork Shifter
Week 4 Sept. 29th	**Orthographic Projection (9:30 – 10:30 AM)** • Exercise 36 to Exercise 39 **AutoCAD (10:30 AM – 12:20 PM)** • AutoCAD Exercise 6: Tucker Engine Gasket
Week 5 Oct. 6th	**Basic Drawing (9:30 – 10:00 AM)** • Compass Sketching *(Compass Required and Print Grid Paper prior to Start of Class)* **AutoCAD (10:00 AM – 12:20 PM)** • AutoCAD Exercise 7: Drive Assembly *(Quick)* • AutoCAD Exercise 13: Pictorial Bar Chart *(Quick)* • AutoCAD Exercise 16: Infusion Plate *(Quick)* • AutoCAD Exercise 22: Electronic Schematic Diagram *(Quick)*
Midterm Recess Oct. 11th to Oct. 17th	
Week 6 Oct. 20th	**Basic Drawing (9:30 – 10:00 AM)** • Compass Sketching *(Compass Required and Print Grid Paper prior to Start of Class)* **AutoCAD (10:00 AM – 12:20 PM)** • AutoCAD Exercise 18: Interociter
Week 7 Oct. 27th	**AutoCAD Test (9:30 AM – 12:20 PM)**
Week 8 Nov. 3rd	**Sectional and Auxiliary Views (9:30 – 10:00 AM)** • Exercise 40 to Exercise 44 *(Print Lecture Notes prior to Start of Class)* **SolidWorks (10:00 AM – 12:20 PM)** • SolidWorks Exercise 1: Basic Modelling: Extrude Options • SolidWorks Exercise 2: Extrude I
Week 9 Nov. 10th	**Sectional and Auxiliary Views (9:30 – 10:00 AM)** • Exercise 45 to Exercise 51 *(Print Lecture Notes prior to Start of Class)* **SolidWorks (10:00 AM – 12:20 PM)** • SolidWorks Exercise 3: Basic Solid Modelling: Double Link • SolidWorks Exercise 4: Extrude II

Week 10 Nov. 17th	**Isometric Sketching (9:30 – 10:00 AM)** • Exercise 52 to Exercise 55 *(Print Grid Paper prior to Start of Class)* **SolidWorks (10:00 AM – 12:20 PM)** • SolidWorks Exercise 5: Basic Solid Modelling: Alignment Pin, Pin Head & Single Link • SolidWorks Exercise 6: Bottom Up Assembly: Link Assembly
Week 11 Nov. 24th	**Isometric Sketching (9:30 – 10:00 AM)** • Exercise 56 to Exercise 58 *(Print Grid Paper prior to Start of Class)* **SolidWorks (10:00 AM – 12:20 PM)** • SolidWorks Exercise 7: Assembly Drawing: Links Assembly • SolidWorks Exercise 8: Revolved Parts: Ball Joint Arm
Week 12 Dec. 1st	**SolidWorks Test (9:30 AM – 12:20 PM)**
Week 13 Dec. 8th	**SolidWorks (9:30 AM – 12:20 PM)** • SolidWorks Exercise 9; Revolved Parts; Center Ball Joint • SolidWorks Exercise 10; Bottom Up Assembly; Ball Joint Assembly
Final Exam as Scheduled by Registrar's Office	

Percentage grades will be converted to letter grades and grade points per the University calendar.

LEARNING OUTCOMES

1. Read, understand, create and interpret two-dimensional engineering schematics and drawings.
2. Produce orthographic view, auxiliary views, section view details and assembly drawings of mechanical and electrical components.
3. Develop engineering drawings in agreement with standardized conventions for dimensioning, text, and views placing, as well as necessary documentation such as title block and bills of materials.
4. Produce three-dimensional parametric models of prismatic parts and assemblies of medium complexity using solid-modeling software.
5. Create two-dimensional drawings from the three-dimensional models; generated drawings include dimensions and title block information.
6. Manipulate model parts if necessary to fit design constraints and final requirements.

POLICIES

Anti-Discrimination

The Faculty of Engineering is concerned with ensuring an environment that is free of all discrimination. If there is a problem, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer or the Human Rights Consultant, as soon as possible. https://equity.mcmaster.ca/documents/anti-discrimination-policy.pdf

Academic Integrity

You are required to exhibit honestly and use ethical behaviour in all aspects if the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act of fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, located at: http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf .

The following illustrates only three forms of academic dishonesty:

1. Plagiarism. e.g. the submission of work that is not own or for which other credit has been obtained
2. Improper collaboration in group work
3. Copying or using unauthorized aids in tests and examinations.

Requests for Relief for Missed Academic Term Work (Assignments, Mid-Terms, etc.)

The McMaster Student Absence Form is a self reporting tool for **Undergraduate Students** to report absences that last up to 5 days and provides the ability to request accommodation for any missed academic work. Please note, this tool cannot be used during any final examination period.

You may submit a maximum of 1 Academic Work Missed requests per term. It is YOUR responsibility to follow up with your Instructor immediately regarding the nature of the accommodation.

If you are absent more than 5 days or exceed 1 request per term you MUST visit your Associate Dean's Office (Faculty Office). You may be required to provide supporting documentation.

This form should be filled out immediately when you are about to return to class after your absence. http://www.mcmaster.ca/msaf/

Communications

It is the student's responsibility to:

- Maintain current contact information with the University, including address, phone numbers, and emergency contact information.
- Use the University provided e-mail address or maintain a valid forwarding e-mail address.
- Regularly check the official University communications channels. Official University communications are considered received if sent by postal mail, by fax, or by e-mail to the student's designated primary e-mail account via their @mcmaster.ca alias.
- Accept that forwarded e-mails may be lost and that e-mail is considered received if sent via the student's @mcmaster.ca alias.
- Check the McMaster/Avenue email and course websites on a regular basis during the term.

Protection of Privacy Act (FIPPA)

The Freedom of Information and Protection of Privacy Act (FIPPA) applies to universities. Instructors should take care to protect student names, student numbers, grades and all other personal information at all times. For example, the submission and return of assignments and posting of grades must be done in a manner that ensures confidentiality.
http://www.mcmaster.ca/univsec/fippa/fippa.cfm

Academic Accommodation of Students with Disabilities Policy

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information consult McMaster's policy for Academic Accommodation of Students with Disabilities
http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf

Students must forward a copy of the SAS accommodation to the instructor of each course. If a student with a disability chooses NOT to take advantage of a SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. http://sas.mcmaster.ca

Student Code of Conduct

The Student Code of Conduct (SCC) exists to promote the safety and security of all the students in the McMaster community and to encourage respect for others, their property and the laws of the land. McMaster University is a community which values mutual respect for the rights, responsibilities, dignity and well-being of others. The purpose of the Student Code of Conduct is to outline accepted standards of behavior that are harmonious with the goals and the well-being of the University community, and to define the procedures to be followed when students fail to meet the accepted standards of behavior. All students have the responsibility to familiarize themselves with the University regulations and the conduct expected of them while studying at McMaster University.
http://judicialaffairs.mcmaster.ca/pdf/SCC.pdf