DRAFTING AND ENGINEERING SUPPORT Program

ISLOs, PSLOs, CSLOs, Mapping, and Assessment Plan

			Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
			F 2013	S 2014	F 2014	S 2015	F 2015	S 2016	F 2016	S 2017	F 2017	S 2018	F 2018	S 2019
	INSTITUTIONAL STUDENT LEARNING OUTCOMES - ISLOs													
ISLO 1	**COMMUNICATION**													
1A	Read													
1B	Listen													
1C	Write													
1D	Dialogue													
ISLO 2	**TECHNOLOGY AND INFORMATION COMPETENCY**													
2A	Demonstrate Technical Literacy													
2B	Apply Technology													
2C	Access Information													
2D	Evaluate and Examine Information													
ISLO 3	**CRITICAL AND CREATIVE THINKING**													
3A	Inquire													
3B	Analyze													
3C	Problem Solve													
3D	Express													
ISLO 4	**CITIZENSHIP**													
4A	Ethics													
4B	Diversity													
4C	Sustainability/Global Awareness													
4D	Personal Responsibility													

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	DRAFTING AND ENGINEERING SUPPORT PROGRAM OUTCOMES - PSLOs	**Related ISLOs**												
PSLO A	Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	1A,1B,1D,2A,2B,2C,2D,3B,3C,3D,4D												
PSLO B	Demonstrate a working knowledge of the design process and the importance of concurrent engineering principles.	1A,1B,1C,1D,2A,2C,2D,3A,3B,3D,4C,4D												
PSLO C	Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	1A,1B,1D,2A,2B,2C,2D,3A,3B,3C,4D												
PSLO D	Develop complete working drawings in discipline of study for use in manufacturing/building application.	1B,1C,1D,2A,2B,2C,2D,3A,3B,3C,3D,4C,4D												

ARCHITECTURAL/CIVIL CONCENTRATION AA or AS DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT - same as the PSLOs.
MECHANICAL/CIVIL CONCENTRATION AA or AS DEGREE AND/OR CERTIFICATE OF ACHIEVEMENT - same as the PSLOs.
DRAFTING ESSENTIALS SKILLS CERTIFICATE - same as the PSLOs.
ARCHITECTURAL DRAFTING SPECIALIST SKILLS CERTIFICATE - same as the PSLOs.
MECHANICAL DRAFTING SPECIALITS SKILLS CERTIFICATE - same as the PSLOs.

	DRAFTING AND ENGINEERING SUPPORT COURSE OUTCOMES - CSLOs	**Related PSLO**												
	DES 1 - Techincal Drafting I		C - Completed, P- Planned											
CSLO 1	Industry Graphic Standards: Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C												
CSLO 2	Dimensioning-Industry Standards: Define and apply the conventions and standards of ASME Y14.5 relative to pictorial drawings.	C												
CSLO 3	Design Process: Define the five steps in the design process.	B												
CSLO 4	CAD Standards: Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	A												
CSLO 5	3D Solid Modeling UCS: Demonstrate the proper use of the UCS.	A												

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	DES 2 - Technical Drafting II													
CSLO 1	Industry Graphic Standards: Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C												
CSLO 2	Auxilliary Views: Construct partial auxiliary views , half auxiliary views and auxiliary sections and apply them to part drawings.	C												
CSLO 3	Design Process: Define the five steps in the design process.	B												
CSLO 4	CAD Standards: Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	A												
CSLO 5	Section View Conventions: Demonstrate the appropriate Section view conventions according to the ASME standard for views development.	C												
CSLO 6	Working Drawings: Design complete working drawings in discipline of study for use in manufacturing/building application.	D												
CSLO 7	Design for Manufacturability: Explain the role that Design for Manufacturability plays in product design.	B												
CSLO 8	Prototype: Interpret the ASME Y14.1 Standard and apply its conventions to prototypes.	C												
	DES 3D - Design for Additive Manufacturing - 3D Printing													
CSLO 1	Demonstrate a working knowledge of the design process and the importance of concurrent engineering principles.	B												
CSLO 2	Operate a 3D printer unassisted and troubleshoot common issues.	D												
CSLO 3	Create a 3D solid model suitable for 3D printing keeping in mind constraints and advantages of technology.	A,B,D												
CSLO 4	Perform basic analysis of a STL File to determine suitability for 3D printing.	A,D												
CSLO 5	Be conversant of 3DP technology and current trends.	A,B,C												
	DES 10 - Industrial and Civil Applications of Computer-Aided Design													
CSLO 1	Industry Graphic Standards: Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C												
CSLO 2	Profiles: Construct profile drawings using contour maps, profile measurement field notes and engineering sketches.	D												
CSLO 3	Pacing exercise: Demonstrate a working knowledge of pacing and/or taping as a form of measurement to determine field dimensions and produce field sketches that can be turned into a CAD drawing.	A,C,D												
CSLO 4	CAD Standards: Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	A												
CSLO 5	Working Drawings: Design complete working drawings in discipline of study for use in manufacturing/building application.	D												

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	DES 11 - Three-Demensional Modeling													
CSLO 1	Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C												
CSLO 2	Apply welding symbols to engineering drawings showing the different types of welded joints.	A,C,D												
CSLO 3	Create custom drawing sheets, utilize drawing templates for drawing development, Create drawing views that conform to AMSE/ANSI Standards and Create bill of materials and design tables.	D												
CSLO 4	Create part geometry using the best profile of the part model and Construct the details of the part model following the design intent.	A												
CSLO 5	Create working drawings of parts using measuring devices to interpret feature size.	B,C,D												
CSLO 6	Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	A												
CSLO 7	Design complete working drawings in discipline of study for use in manufacturing/building application.	D												
	DES 12 - Geometric Dimensioning and Tolerancing		C - Completed, P- Planned											
CSLO 1	Industry Graphic Standards: Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C												
CSLO 2	Basic dimensioning and tolerancing rules: Define tolerancing fundamentals, and apply material conditions to features on drawings. Apply fits and allowances to mating parts and explain the advantages and disadvantages of chain and Datum Dimensioning.	B,D												
CSLO 3	CAD Standards: Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	A												
CSLO 4	Working Drawings: Design complete working drawings in discipline of study for use in manufacturing/building application.	D												
CSLO 5	Symbols & Terms: Identify dimensioning and geometric characteristic symbols and evaluate the appropriate use of dimensioning and geometric characteristic symbols. Apply datum feature and target symbols to features on drawings and evaluate the appropriate use of material condition symbols and feature control frames on drawings.	C												

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	DES 20 - Architectural Drawing I													
CSLO 1	Industry Graphic Standards: Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C												
CSLO 2	Design Process: Define the five steps in the design process.	B												
CSLO 3	CAD Standards: Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	C												
CSLO 4	Drawing Development: Demonstrate correct development of Architectural Working drawings.	D												
CSLO 5	Working Drawings: Design complete working drawings in discipline of study for use in manufacturing/building application.	D												
CSLO 6	Cartesian Coordinate Entry: Properly utilize cartesian coordinate input to develop CAD data.	A												
CSLO 7	Architectural terms-Vocabulary: Utilize correct Architectural terms in class, labs and reports.	C												
	DES 21 - Architectural Drawing II													
CSLO 1	Industry Graphic Standards: Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C												
CSLO 2	Design Process: Define the five steps in the design process.	B												
CSLO 3	CAD Standards: Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	A												
CSLO 4	Architectural Design Flow: Demonstrate proper use of Architectural Design Flow process.	B												
CSLO 5	Working Drawings: Design complete working drawings in discipline of study for use in manufacturing/building application.	D												
CSLO 6	Architectural Drawing Development: Properly develop both 2D and 3D Architectural drawings according to accepted industry and CAD standards.	A,C												
	DES 22 - Architectural Drawing III-BMI (Building Information Modeling)													
CSLO 1	Industry Graphic Standards: Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C,D												
CSLO 2	Design Process and Concurrent Engineering: Demonstrate a working knowledge of the design process and the importance of concurrent engineering principles.	B												
CSLO 3	CAD standards: Demonstrate computer aided drafting practices that conform to business and industry CAD standards.	A												
CSLO 4	3D Architectural model development: Develop 3D Architectural Model (virtual) according to accepted industry and CAD standards.	A,C												
CSLO 5	Working Drawings: Develop Complete set of Architectural working drawings.	D												

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	DES 28 - Independent Study													
CSLO 1	Develop an independent study project with written goals and objectives to include critical thinking.													
CSLO 2	Complete proposed project independently.													
CSLO 3	Evaluate project success with instructor.													
	DES 40 - Managing the Computer-Aided Design (CAD) Environment		C - Completed, P- Planned											
CSLO 1	Industry Graphic Standards: Apply appropriate, current and relevant industry standards in preparing technical documentation for the appropriate discipline of their study.	C												
CSLO 2	CAD Standards: Demonstrate a working knowledge of current CAD standards.	A												
CSLO 3	Industry Drawing Standards: Demonstrate a working knowledge of various accepted industry drafting standards.	A,C												
CSLO 4	3D Model Development: Develop 3D working model (prototype) for use in the design process.	A,B												
	DES 95 - Internship in Drafting and Engineering Support													
CSLO 1	Perform internship duties that relate to educational or occupational goal.													
CSLO 2	Complete proposed internship and expand knowledge and skills in chosen field.													
CSLO 3	Evaluate internship success with site supervisor and instructor.													
	DES 300 - Selected Topics in Drafting and Engineering Support													
CSLO 1														
CSLO 2														
CSLO 3														
CSLO 4														

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CSLO#	**COURSE NUMBER: COURSE NAME**	**Related PSLO**												