Roadmap: Applied Engineering -
Liquid Crystal and Display Engineering - Bachelor of Science
AT-BS-AENG-LCDE
College of Applied Engineering, Sustainability and Technology
Catalog Year: 2016-2017

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses and milestones designed as critical (!) must be completed in the semester listed to ensure a timely graduation.

Critical	Course Subject and Title	Credit Hours	Min. Grade	Major GPA	Attribute	Notes
Semester One [15 Credits]						
!	**MATH 12002 Analytic Geometry and Calculus I**	**5**			KMC	
!	**TECH 13580 Engineering Graphics I**	**3**		■		
!	**PHY 23101 General University Physics I**	**5**			KBS	
	UC 10097 Destination Kent State: First Year Experience [1]	1				
	TECH Electives [2]	1		■		
Semester Two [14 Credits]						
!	**MATH 12003 Analytic Geometry and Calculus II**	**5**				
!	**PHY 23102 General University Physics II**	**5**			KBS	
	TECH 10001 Information Technology	3		■		
	TECH Electives [2]	1		■		
Semester Three [15 Credits]						
!	**CHEM 10060 General Chemistry I**	**4**			KBS	
!	**CHEM 10062 General Chemistry I Laboratory**	**1**			KBS	
!	**TECH 20002 Materials and Processes**	**3**		■		
!	**TECH 21021 Survey of Electricity and Electronics**	**4**		■		
	Kent Core Requirement	3				
Semester Four [15 Credits]						
!	**LCDE 37410 Introduction to Displays and Liquid Crystal Electro-Optical Device Technology**	**3**		■		
	ECON 22060 Principles of Microeconomics	3			KSS	
	TECH 23581 Computer-Aided Engineering Graphics	3		■		
	Kent Core Requirement	3				
	Kent Core Requirement	3				
Semester Five [15 Credits]						
!	**LCDE 47410 Introduction to Display Materials**	**3**		■		
!	**LCDE 47450 Cleanroom Techniques and Liquid Crystal Device Fabrication**	**3**		■		
!	**TECH 33222 Digital Design for Computer Engineering**	**3**		■		
	COMM 15000 Introduction to Human Communication	3			KAD	
	ENG 20002 Introduction to Technical Writing	3		■		
Semester Six [15 Credits]						
!	**LCDE 47560 Flat Panel Displays: Manufacturing, Science and Technology**	**3**		■		
!	**TECH 33031 Programmable Logic Controllers**	**3**		■		
!	**TECH 33363 Metallurgy and Materials Science**	**3**		■		
	Kent Core Requirement	3				
	Kent Core Requirement	3				
Semester Seven [16 Credits]						
!	**TECH 43080 Industrial and Environmental Safety**	**3**		■		
	TECH 33092 Cooperative Education - Professional Development *or* TECH 3/4xxx Electives [2]	2	C [3]	■	ELR/WIC	
	TECH 43550 Computer-Aided Manufacturing	3		■		
	TECH 46330 Visual Basic Programming in Engineering Technology	3		■		
	Kent Core Requirement	3				
	General Electives	2				
Semester Eight [15 Credits]						
!	**TECH 43700 Computer Integrated Manufacturing**	**3**		■		
	TECH 31000 Cultural Dynamics of Technology	3	C [3]	■	DD/WIC	
	TECH 33700 Quality Techniques	3		■		
	TECH Upper-Division Electives	3		■		
	General Electives	3				

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Graduation Requirements Summary

Minimum Total Hours	Minimum Upper-Division Hours 30000 – 40000 level course	Minimum Kent Core Hours	Minimum	
			Major GPA	Overall GPA
120	39	36	2.250	2.000

1. UC 10097 is not required of transfer students with 25 credits (excluding College Credit Plus) or students age 21+ at time of admission.

2. Four credits hours (each course comprising 1 or 2 credits) elective are required, with a minimum 2 credits upper division. These electives may be taken in any semester provided the total semester hours do not exceed 16. These electives may be satisfied by TECH 33092 Cooperative Education-Professional Development. While students are strongly encouraged to take at least one semester of cooperative education, this may not be possible; hence it is not required. Students are strongly urged to talk to their professional advisor about the electives and ensuring the experiential learning requirement (ELR) is fulfilled.

3. A minimum C (2.000) grade must be earned in TECH 31000 or TECH 33092 to fulfill the writing-intensive requirement.

University Requirements: Bachelor's degree-seeking students must meet Kent Core (general education requirements), diversity, writing-intensive and experiential learning requirements. For more information about these requirements, please read the following sections in the University Catalog: Kent Core – www.kent.edu/catalog/kent-core; Diversity Course Requirement – www.kent.edu/catalog/diversity; Writing-Intensive Course Requirement – www.kent.edu/catalog/wic; Experiential Learning Requirement – www.kent.edu/catalog/elr.

Attribute Legend: **DD** Diversity–Domestic; **DG** Diversity–Global; **ELR** Experiential Learning; **KAD** Kent Core Additional; **KBS** Kent Core Basic Sciences; **KCM** Kent Core Composition; **KFA** Kent Core Fine Arts: **KHU** Kent Core Humanities; **KMC** Kent Core Mathematics and Critical Reasoning; **KSS** Kent Core Social Sciences; **WIC** Writing Intensive