

# Liberal Arts and Engineering Studies

## Major Courses

2022 - 2026 Catalog Requirements

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Do you need to fulfill a quarter requirement?  
Check the semester course equivalent!

Major Courses

QUARTER REQUIREMENT		SEMESTER COURSE	NOTES
<b>CHEM 124</b> General Chemistry for Physical Science and Engineering I (4)	➔	<b>CHEM 1120</b> Fundamentals of Chemical Structure and Properties (4)	
<b>LAES 301</b> Project-Based Learning in Liberal Arts and Engineering Studies (4)	➔	<b>LAES 4301</b> Liberal Arts and Engineering Studies Capstone I (4)	
<b>LAES 302</b> Advanced Project-Based Learning in Liberal Arts and Engineering Studies (4)	➔	<b>LAES 4302</b> Liberal Arts and Engineering Studies Capstone II (4)	
<b>LAES 461</b> Senior Project in Liberal Arts and Engineering Studies (4)	➔	<b>LAES 4461</b> Senior Project I in Liberal Arts and Engineering Studies (3)	
<b>LAES 462</b> Capstone Senior Seminar in Liberal Arts and Engineering Studies (4)	➔	<b>LAES 4462</b> Senior Project II in Liberal Arts and Engineering Studies (3)	
<b>MATH 141</b> Calculus I (4)	➔	<b>MATH 1261</b> Calculus I (4)	
<b>MATH 142</b> Calculus II (4)	✗	<b>NOT OFFERED</b>	The department will offer a Bridge Math 142 during Fall 2026 and a Cap 143 during Spring 2027 for students who have only completed Math 141 on quarters. See MATH department for more info.
<b>MATH 142</b> Calculus III (4)	➔	<b>MATH 1262</b> Calculus II (4)	The department will offer a Bridge Math 143 during Fall 2026 for students who have only completed both Math 141 and 142 on quarters. See MATH department for more info.
<b>MATH 241</b> Calculus IV (4)	➔	<b>MATH 2263</b> Calculus III (4)	
<b>MATH 244</b> Linear Analysis I (4)	➔	<b>MATH 2341</b> Linear Analysis (4)	
<b>PHYS 141</b> General Physics I (4)	➔	<b>PHYS 1141</b> General Physics I (4)	
<b>PHYS 142</b> General Physics II (4)	✗	<b>NOT OFFERED</b>	If you complete PHYS 141 by SPRING 2026, but not PHYS 142, take PHYS 142B and PHYS 143C offered during 2026-27 academic year only.
<b>PHYS 143</b> General Physics III (4)	➔	<b>PHYS 1143</b> General Physics II (4)	



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# Liberal Arts and Engineering Studies

## Major & Major Support Courses

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2022 - 2026  
Catalog Requirements

	QUARTER REQUIREMENT	SEMESTER COURSE	NOTES
Major Courses	Choose <b>ONE</b> of the following (4): <b>STAT 312</b> Statistical Methods for Engineers <b>STAT 321</b> Probability and Statistics for Engineers and Scientists <b>STAT 350</b> Probability and Random Processes for Engineers	Choose <b>ONE</b> of the following (3): <b>STAT 3210</b> Engineering Statistics <b>STAT 3310</b> Probability and Random Processes for Engineers	
Study Abroad or Global Perspectives Courses	Choose <b>EIGHT quarter</b> units at the 3000-4000 level. Any upper division course abroad or see LAES website for list of approved Global Perspective courses at Cal Poly	Choose <b>FIVE semester</b> units at the 300-400 level. Any upper division course abroad or see LAES website for list of approved Global Perspective courses at Cal Poly	
Engineering Concentration	Choose <b>ONE</b> of the following Engineering Concentrations (34-36):  Electrical Engineering Industrial Engineering Computer Graphics Usability Studies Individualized Course of Study  (See details for each on the following pages)	Choose <b>ONE</b> of the following Engineering Concentrations (22-24):  Electrical Engineering Industrial Engineering Computer Graphics Usability Studies Individualized Course of Study  (See details for each on the following pages)	
Liberal Arts Concentration	Choose <b>ONE</b> of the following Liberal Arts Concentrations (24):  Technical Communication Interactive Communication - Cinematic Focus Computer Graphics - Theatrical Focus Publishing Technology Individualized Course of Study  (See details for each on the following pages)	Choose <b>ONE</b> of the following Liberal Arts Concentrations (16):  Technical Communication Interactive Communication - Cinematic Focus Computer Graphics - Theatrical Focus Publishing Technology Individualized Course of Study  (See details for each on the following pages)	
Free Elective	<b>FREE ELECTIVES</b>	<b>FREE ELECTIVES</b>	Speak with a CLA Advisor to determine number of free electives required to meet the minimum 180 semester unit requirement.



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# LAES: Electrical Engineering

## Concentration Courses

2022 - 2026 Catalog Requirements

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	QUARTER REQUIREMENT		SEMESTER COURSE	NOTES
Required Courses	<b>EE 111</b> Introduction to Electrical Engineering (1)	➔	<b>EE 1111</b> Introduction to Electrical Engineering (1)	Concurrent enrollment in EE 1111L
	<b>EE 151</b> Introduction to Electrical Engineering Laboratory (1)	➔	<b>EE 1111L</b> Introduction to Electrical Engineering Laboratory (1)	Concurrent enrollment in EE 1111
	<b>EE 112/113</b> Electric Circuit Analysis I (2)	➔	<b>EE 2211</b> Electric Circuit Analysis I (3)	If not taken prior to semesters, ES 112 and 211 may be fulfilled with EE 2211 and EE 2241. Additional elective units may be required for total units. Concurrent enrollment with EE 2241.
	<b>&amp;</b>			
	<b>EE 211</b> Electric Circuit Analysis II (3)	➔		
	<b>EE 241</b> Electric Circuit Analysis Laboratory II (3)	➔	<b>EE 2241</b> Electric Circuit Analysis Laboratory I (1)	Requires concurrent enrollment with EE 2211.
	<b>EE 212</b> Electric Circuit Analysis III (3)	➔	<b>EE 2212</b> Electric Circuit Analysis II (3)	If not taken prior to semesters, ES 212 and 242 may be fulfilled with EE 2212. Additional elective units may be required for total units.
	<b>&amp;</b>			
	<b>EE 242</b> Electric Circuit Analysis Laboratory III (1)	➔		
	<b>EE 255</b> Energy Conversion Electromagnetics (3)	➔	<b>EE 3255</b> Electric Machines and Power Systems (3)	Requires concurrent enrollment with EE 3255L
	<b>EE 295</b> Energy Conversion Electromagnetics Laboratory (1)	➔	<b>EE 3255L</b> Electric Machines and Power Systems Laboratory (1)	Requires concurrent enrollment with EE 3255
	<b>EE 335</b> Electromagnetic Fields and Transmission (4)	➔	<b>EE 3335</b> Electromagnetic Fields and Transmission (3)	Concurrent enrollment in EE 3335L required
	<b>EE 375</b> Electromagnetic Fields and Transmission Laboratory (1)	➔	<b>EE 3335L</b> Electromagnetic Fields and Transmission Laboratory (1)	Concurrent enrollment in EE 3335 required
	<b>EE 406</b> Power Systems Analysis I (4)	➔	<b>EE 4406</b> Power System Analysis I (3)	
	<b>EE 407</b> Power Systems Analysis II (4)	➔	<b>EE 4407</b> Power System Analysis II (3)	
	<b>EE 444</b> Power Systems Laboratory (1)	✗	<b>NOT OFFERED</b>	Take any upper division power elective
Electives	Advisor Approved Power Technical Elective (4)	➔	Advisor Approved Power Technical Elective (3)	



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# LAES: Industrial Engineering

## Concentration Courses

2022 - 2026 Catalog Requirements

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Required Courses	QUARTER REQUIREMENT		SEMESTER COURSE	NOTES
	IME 101 Introduction to Industrial and Manufacturing Engineering (1)	➔	IME 1101 Introduction to Industrial and Manufacturing Engineering (1)	
	IME 223 Process Improvement Fundamentals (4)	➔	IME 1223 Process Improvement Fundamentals (4)	
	IME 239 Industrial Costs and Controls (3)	✗	NOT OFFERED	Financial Decision Making for Engineers: IME 315 on quarters or IME 2315 on semesters is recommended, with substitution
	IME 301 Operations Research I	➔	IME 3302 Operations Research and Management (4)	
	IME 303 Project Organization and Management (4)	➔	IME 3303 Project Organization and Management (3)	
	IME 314 Engineering Economics (3)	✗	NOT OFFERED	Select any 3-4 unit Upper Division IME course, with substitution
	IME 319 Human Factors Engineering (3) OR IME 320 Human Factors and Technology (4)	➔	IME 4319 Human Factors and Ergonomics in Engineering and Systems Design (3) OR IME 3320 Human Factors and Technology (3)	
	IME 326 Engineering Test Design and Analysis (4)	➔	IME 3326 Statistical Decision-Making and Quality Control (4)	
	IME 420 Process and System Simulation (4)	➔	IME 3420 Process and System Simulation (4)	
	IME 443 Facilities Planning and Design (4)	➔	IME 3443 Facilities Design and Warehousing (4)	



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# LAES: Computer Graphics

## Concentration Courses

2022 - 2026 Catalog Requirements

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Do you need to fulfill a quarter requirement?

Check the semester course equivalent!

Required Courses	QUARTER REQUIREMENT	SEMESTER COURSE	NOTES
	<b>CSC/CPE 101</b> Fundamentals of Computer Science (4)	<b>CSC 1001</b> Fundamentals of Computer Science (3)	New! Lab offered separately on semesters. Taken concurrently with CSC 1001, if taken on semesters.
		<b>CSC 1001L</b> Fundamentals of Computer Science Laboratory (1)	
	<b>CSC/CPE 202</b> Data Structures (4)	<b>CSC 2001</b> Data Structures (3)	New! Lab offered separately on semesters. Taken concurrently with CSC 2001, if taken on semesters
		<b>CSC 2001L</b> Data Structures Laboratory (1)	
	<b>CSC/CPE 203</b> Project-Based Object-Oriented Programming and Design (4)	<b>NOT OFFERED</b>	If CSC 2001 and 2001L are taken in semesters, CSC 203 will be fulfilled. If CSC 202 taken in quarters, but not CSC 203, then any CSC/CPE elective can be selected to fulfill units for 203.
	<b>CSC/CPE 123</b> Introduction to Computing (4)	<b>CSC 1024</b> Introduction to Computing (2)	Additional CSC/CPE elective units may be required if 2 unit CSC 1024 taken on semesters
	<b>CSC 225</b> Introduction to Computer Organization (4)	<b>CPE 2300</b> Introduction to Computer Systems (3)	
	<b>CSC 248</b> Discrete Structures (4)	<b>NOT OFFERED</b>	MATH 2031 recommended, with substitution. Other CSC/CPE courses may also be considered, check with an Advisor.
	<b>CSC/CPE 357</b> Systems Programming (4)	<b>CSC 2050</b> System Software Mechanics (3)	
	<b>CSC/CPE 471</b> Introduction to Computer Graphics (4)	<b>CSC 4710</b> Introduction to Computer Graphics (3)	
	<b>CSC 476</b> Real-Time 3D Computer Graphics Software (4)	<b>CSC 4760</b> Real-Time 3D Computer Graphics Software (3)	



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# LAES: Usability Studies

## Concentration Courses

2022 - 2026 Catalog Requirements

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Do you need to fulfill a quarter requirement?

Check the semester course equivalent!

Required Courses	QUARTER REQUIREMENT	SEMESTER COURSE	NOTES
	<b>CSC/CPE 101</b> Fundamentals of Computer Science (4)	<b>CSC 1001</b> Fundamentals of Computer Science (3)	New! Lab offered separately on semesters. Taken concurrently with CSC 1001, if taken on semesters.
		<b>CSC 1001L</b> Fundamentals of Computer Science Laboratory (1)	
	<b>CSC/CPE 202</b> Data Structures (4)	<b>CSC 2001</b> Data Structures (3)	New! Lab offered separately on semesters. Taken concurrently with CSC 2001, if taken on semesters
		<b>CSC 2001L</b> Data Structures Laboratory (1)	
	<b>CSC/CPE 203</b> Project-Based Object-Oriented Programming and Design (4)	<b>NOT OFFERED</b>	If CSC 2001 and 2001L are taken in semesters, CSC 203 will be fulfilled. If CSC 202 taken in quarters, but not CSC 203, then any CSC/CPE elective can be selected to fulfill units for 203.
	<b>CSC 225</b> Introduction to Computer Organization (4)	<b>CPE 2300</b> Introduction to Computer Systems (3)	
	<b>CSC 248</b> Discrete Structures (4)	<b>NOT OFFERED</b>	MATH 2031 recommended, with substitution. Other CSC/CPE courses may also be considered, check with an Advisor.
	<b>CSC 307</b> Introduction to Software Engineering (4)	<b>NOT OFFERED</b>	Select any 3-4 unit Upper Division CSC/CPE course, with substitution
	<b>CSC/CPE 357</b> Systems Programming (4)	<b>CSC 2050</b> System Software Mechanics (3)	
	<b>CSC 484</b> User-Centered Interface Design and Development (4)	<b>CSC 4184</b> User-Centered UI/UX Design (3)	
	<b>CSC 486</b> Human-Computer Interaction Theory and Design (4)	<b>CSC 4186</b> Human-Computer Interaction (3)	



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# LAES: College of Engineering Individualized Course of Study

## Concentration Courses

2022 - 2026 Quarter Catalog Requirements

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Do you need to fulfill a  
quarter requirement?  
Check the semester  
course equivalent!

### Courses

Pursue an individualized course of study from courses offered in the College of Engineering, designed to meet the LAES learning objectives. This course of study consists of 34 units of electives with a minimum of 12 units at the 300-400 quarter level. Courses must be drawn from at least two engineering disciplines. All courses must be approved by an LAES Program Director.

See course conversion guide at [semester.calpoly.edu](https://semester.calpoly.edu) for semester versions of your approved LAES courses (available winter 2026)

Consult with Concentration Advisor to confirm total quarter units completed while under semesters.



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# LAES: Technical Communcation

## Concentration Courses

2022 - 2026 Catalog Requirements



Do you need to fulfill a quarter requirement?  
Check the semester course equivalent!

	QUARTER REQUIREMENT		SEMESTER COURSE	NOTES
Required Courses	<b>COMS 317</b> Technology and Human Communication (4)	➡	<b>COMS 3317</b> Technology and Human Communication (3)	
	<b>ENGL 317</b> Technical Editing (4)	➡	<b>ENGL 3317</b> Humanistic Perspectives in Technical and Professional Editing (3)	
	<b>ENGL 319</b> Information Design and Production (4)	✖	<b>NOT OFFERED</b>	Select any ENGL or COMS related to technical and professional communications or additional course from approved electives, with substitution. New semester courses to consider: ENGL 3637, 4427, 4473 or 4476
Approved Electives	Choose <b>THREE</b> of the following: <b>COMS 213</b> <b>COMS 301</b> <b>ENGL 310</b> <b>ISLA 303</b> <b>PHIL 337 or PHIL 341</b>	➡	Choose <b>THREE</b> of the following: <b>COMS 2213</b> <b>COMS 3301</b> <b>ENGL 3310</b> <b>ISLA 3303</b> <b>PHIL 3337 or PHIL 3341</b>	



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# LAES: Interactive Communication - Cinematic Focus

## Concentration Courses

2022 - 2026 Quarter Catalog Requirements

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Do you need to fulfill a quarter requirement?

Check the semester course equivalent!

	QUARTER REQUIREMENT		SEMESTER COURSE	NOTES
Required Courses	ENGL 371 Film Styles and Genres (4)	➔	ENGL 3371 Film Styles and Genres (3)	
	ENGL 411 New Media Arts I (4)	✗	NOT OFFERED	Select any ENGL, ISLA or COMS related to interactive communication or media or additional course from approved electives, with substitution.
	TH 210 Introduction to Theatre (4)	➔	TH 2210 Introduction to Theatre (3)	
Approved Electives	Choose <b>THREE</b> of the following: <b>COMS 206</b> <b>COMS 384</b> <b>COMS 385</b> <b>ENGL 372</b> <b>ENGL 412</b> <b>POLS 470</b>	➔	Choose <b>THREE</b> of the following: <b>COMS 2206</b> <b>COMS 3384</b> <b>COMS 3385</b> <b>ENGL 3372</b> <b>POLS 4470</b>	



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# LAES: Interactive Communication - Theatrical Focus

## Concentration Courses

2022 - 2026 Quarter Catalog Requirements

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Do you need to fulfill a  
quarter requirement?

Check the semester  
course equivalent!

	QUARTER REQUIREMENT	SEMESTER COURSE	NOTES
Required Courses	<b>ENGL 411</b> New Media Arts I (4)	<b>NOT OFFERED</b>	Select any ENGL, ISLA or COMS related to interactive communication or theater or additional course from approved electives, with substitution.
	<b>TH 210</b> Introduction to Theatre 4	<b>TH 2210</b> Introduction to Theatre (3)	
	<b>TH 227</b> Theatre History I (4) OR <b>TH 228</b> Theatre History II (4)	<b>TH 2227</b> Theatre History I (3) OR <b>TH 2228</b> Theatre History II (3)	
Approved Electives	Choose <b>12 UNITS</b> of the following: <b>ENGL 412</b> <b>ISLA 320</b> <b>TH 220</b> <b>TH 230</b> <b>TH 330</b> <b>TH 390</b> <b>TH 430</b> <b>TH 434</b>	Choose <b>12 UNITS</b> of the following: <b>ISLA 3320</b> <b>TH 2220</b> <b>TH 2230</b> <b>TH 3330</b> <b>TH 3390</b> <b>TH 4430</b> <b>TH 2250</b>	



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# LAES: Publishing Technology

## Concentration Courses

2022 - 2026 Catalog Requirements

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Do you need to fulfill a quarter requirement?

Check the semester course equivalent!

	QUARTER REQUIREMENT		SEMESTER COURSE	NOTES
Required Courses	<b>GRC 101</b> Introduction to Graphic Communication (3)	➔	<b>GRC 1000</b> Introduction to Graphic Communication (3)	
	<b>GRC 201</b> Digital Publishing Systems (3)	➔	<b>GRC 1020</b> Introduction to Digital Applications (3)	
	<b>GRC 211</b> Materials for Graphic Communication Applications (4)	➔	<b>GRC 1040</b> Materials for Graphic Communication Applications (3)	
	Choose <b>ONE</b> of the Following: <b>ISLA 303</b> Values and Technology (4) <b>PHIL 341</b> Professional Ethics (4) <b>PHIL 337</b> Business Ethics (4)	➔	Choose <b>ONE</b> of the Following: <b>ISLA 3303</b> Values and Technology (3) <b>PHIL 3341</b> Professional Ethics (3) <b>PHIL 3337</b> Business Ethics (3)	
Approved Electives	Choose <b>TEN quarter units</b> of the following: <b>COMS 317</b> <b>GRC 316</b> <b>GRC 328</b> <b>GRC 329</b> <b>GRC 402</b>	➔	Choose <b>FIFTEEN semester units</b> of the following: <b>COMS 3317</b> <b>GRC 3000</b> <b>GRC 2040</b> <b>GRC 3080</b>	



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# LAES: Individualized Course of Study in the Liberal Arts

## Concentration Courses

2022 - 2026 Quarter Catalog Requirements

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Do you need to fulfill a quarter requirement?

Check the semester course equivalent!

### Courses

Consists of 24 units of an advisor approved individualized course of study from courses offered in the College of Liberal Arts designed to meet the LAES learning objectives, with at least 12 of the units at the upper-division 300-400 quarter level.

Students may complete a minor program selected from pre-approved minors. These minors include any minor offered by the College of Liberal Arts, as well as interdisciplinary, cross-college minors in which students complete a minimum of half of the units in the College of Liberal Arts (e.g., Indigenous Studies in Natural Resources & the Environment; Sustainable Environments).

See course conversion guide at [semester.calpoly.edu](https://semester.calpoly.edu) for semester versions of your approved LAES courses (available winter 2026)

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