

AE Department Undergraduate Electives					
Course No.	Course Title	C	L/E	M	S
Recommended Disciplinary Opportunities within Architectural Engineering Department (recommended AE electives)					
AE 430	Indeterminate Structures	○	○	○	●
AE 431	Advanced Concrete Design Building	○	○	○	●
AE 432	Design of Masonry Structures	○	○	○	◐
AE 445	Building Retuning	◐	◐	○	○
AE 453	Load and Energy Simulation	○	◐	●	○
AE 454	Advanced HVAC	◐	●	●	○
AE 455	Advanced HVAC Design	◐	◐	●	◐
AE 456	Solar Energy Building System Design	◐	◐	◐	○
AE 457	HVAC Controls	◐	◐	●	◐
AE 458	Advanced Acoustics	○	◐	●	◐
AE 459	Measurement Science for High Performance Building Systems (Prerequisite: AE310)	◐	◐	◐	◐
AE 461	Architectural Illumination Systems & Design	◐	●	◐	○
AE 464	Advanced Architectural Illumination Systems & Design	○	●	◐	○
AE 466	Computer Aided Lighting & Design	○	●	○	○
AE 467	Advanced Building Electrical Systems	◐	●	●	○
AE 468	Building Electrical and Communication Systems	◐	●	◐	○
Course No.	Course Title	C	L/E	M	S
AE 470	Residential Building Design & Construction	◐	◐	◐	◐
AE 471	Construction Management of Residential Building Projects	◐	◐	○	○
AE 472	Building Construction Planning & Management	●	◐	○	○
AE 473	Building Construction Management Control	●	○	○	○
AE 475	Building Construction Engineering I	●	○	○	◐
AE 476	Building Construction Engineering II	●	◐	◐	◐
AE 496	Independent Study (requires approval from an AE faculty)	◐	◐	◐	◐
Allowable Interdisciplinary Opportunities across Penn State Campus (pre-approved non-AE technical electives; advisor consultation not needed)					
ARCH 481	Digital Design Media (requires approval of instructor)	○	◐		

BE 462	Design of Wood Structures	○			◐
CE 410	Sustainable Residential Subdivision Design	◐			
CE 436	Construction Engineering Materials	○			◐
CE 441	Structural Design of Foundations				◐
CE 447	Structural Analysis by Matrix Methods				◐
CMPSC 431	Database Management Systems (note: CMPSC 221 prerequisite)	◐			
EDSGN 401	Engineering Systems Design	◐	◐	◐	◐
EGEE 437	Design of Solar Energy Conversion Systems	○	◐	◐	
EMCH 461	Finite Elements in Engineering				◐
EMCH 471	Engineering Composite Materials				◐
ENGR 407	Technology-Based Entrepreneurship	○	○	○	
Course No.	Course Title	C	L/E	M	S
ENGR 408	Leadership Principles	◐	○	○	
ENGR 409(US)	Leadership in Organizations	◐	○	○	
ENGR 411	Entrepreneurship Business Basics	◐	○	○	○
IE 402	Advanced Engineering Economics	◐	◐	◐	◐
MATSE 440	Non-Destructive Testing	○	○	○	◐
ME 444	Engineering Optimization	○	○	○	○
PSYCH 253	Introduction to Psychology of Perception		◐		
PSYCH 484	Work Attitudes & Motivation (note: PSYCH 100 prerequisite)	◐			
PSYCH 485	Leadership in Work Settings	◐			
RM 303	Real Estate Risk Management		○	○	
THEA 270	Introduction to Lighting Design		◐		
THEA 470	Advanced Topics in Lighting Design		◐		
ESC 582	Micro- and Nano-structured Light Emitting Devices		◐		

- 3 credits of ROTC may be used as Department Elective, and an additional 3 credits of ROTC may be used for GHA credit. Student must be commissioned as an officer upon graduation to qualify for the 6 credits of substitution.
- The number of departmental electives needed by option, faculty prefer that at least two of the elective courses be taken from the 'recommended' technical electives indicated:
 - Construction: 8;
 - Lighting/Electrical: 12;

- Mechanical: 9;
- Structural: 9

The following may be acceptable with the approval of your academic advisor and an approved petition:

- AE 500-level course may be acceptable upon approval by advisor.
- Some other CE 400 & 500-level courses may be accepted with advisor consultation.
- Some other ME 400 & 500-level courses may be accepted with advisor consultation.

● – required course for that option

◐ – recommended elective for that option

○ – allowable elective