



# B.S. IN ARCHITECTURAL ENGINEERING

## CATALOG YEAR 2017-2018

### First Year

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
<b>1<sup>ST</sup> SEMESTER</b>		
MATH 122A/B <b>OR</b> MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I <b>OR</b> CHEM 105A/106A	4	Appropriate Math Placement
ENGL 101 <b>OR</b> 107 <b>OR</b> 109H First-Year Composition	3	ENGL 100 with C or better
ENGR 102A/102B Introduction to Engineering <b>OR</b> ENGR 102	3	Concurrent enrollment or completion of MATH 122B or MATH 125
Tier I General Education	3	
<b>2<sup>ND</sup> SEMESTER</b>		
MATH 129 Calculus II	3	MATH 122B or 124 or 125 with C or better
ENGL 102 <b>OR</b> 108 <b>OR</b> 109H First-Year Composition	3	ENGL 101, ENGL 107
PHYS 141 Introductory Mechanics <b>OR</b> PHYS 161H	4	MATH 122B or 124 or 125
Tier I General Education	3	
Tier I General Education	3	





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## Second Year

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
<b>3<sup>RD</sup> SEMESTER</b>		
ARCE 201 Introduction to Architectural Engineering	1	MATH 122B or 124 or 125
CE 214 Statics	3	PHYS 141 or 161H; MATH 129 or 250B
MATH 223 Vector Calculus	4	MATH 129 or 250A with C or better
PHYS 241 <b>OR</b> PHYS 261H Introductory Electricity and Magnetism	4	For PHYS 241 or PHYS 261H: PHYS 141 or PHYS 161H, MATH 129 or 250A.
ARC 220 History of Applied Building Technology	3	ENGR 102 or 102A/B
<b>4<sup>TH</sup> SEMESTER</b>		
CE 215 Mechanics of Solids	3	CE 214
CE 218 Mechanics of Fluids	3	CE 214 OR ENGR 211C
MATH 254 Introduction to Ordinary Differential Equations	3	MATH 129 or 223 or 250A with C or better
ARCE 210 Building Information Modeling	3	ENGR 102 or 102A/B
ARCE 223 Environmental Adaptive Systems	3	PHYS 141
Tier I General Education	3	





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## Third Year

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
<b>ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)</b>		
<b>5TH SEMESTER</b>		
AME 230 Thermodynamics	3	PHYS 141
CE 301 Engineering Communications	3	
CE 310 Probability and Statistics in Civil Engineering	3	MATH 122A/B or 124 or 125
CE 333 Elementary Structural Analysis	3	CE 215
CE 381 Construction Engineering Management	3	
ENGR 211M Engineering Science Module - Circuits	1	
<b>6TH SEMESTER</b>		
AME 442 HVAC System Design	3	AME 230 and CE 218
CE 334 Structural Design in Steel	3	CE 333
ARCE 320 Power Systems Engineering	3	ENGR 211M
ARCE 330 Architecture Lighting	3	
CE 389 Materials Testing Laboratory	1	CE 215
Tier II General Education	3	





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## Fourth Year

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
<b>7<sup>TH</sup> SEMESTER</b>		
ARCE 400A Capstone Design Studio	6	
ARCE 408A Issues in Professional Practice	2	
CE 335 Structural Design-Concrete	3	CE 333
ENGR 211P Engineering Science Module – Engineering Economics	1	MATH 129
ENGR 211I Engineering Science Module – Dynamics	1	CE 214
Tech Elective (math/basic science)	3	
<b>8<sup>TH</sup> SEMESTER</b>		
ARCE 400B Senior Design	3	
CE 438 Behavioral and Design-Structural Systems	3	CE 334
Technical Elective	3	
Technical Elective	3	
Tier II General Education	3	

\*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.





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## **Math/Science Electives**

CE 303 – Numerical Analysis in CE

CE 402 – Introduction to Finite Element Analysis

MATH 310 – Applied Linear Algebra

RNR 351 – Ecosystem Services: Science and Management

RNR 427 – Earth's Changing Carbon Cycle

## **ARCE Technical Electives**

ARC 321 – Building Materials and Methods II

ARC 326 – Site Analysis and Planning

ARC 421 – Environmentally Adaptive Systems II

ARC 461A – Water Efficiency in Buildings

ARC 461D – Computer Energy Analysis

ARC 461E – Sustainable Design and the LEED Initiative

SBE 301 – Introduction to Design Thinking

CE 432 – Advanced Structural Design in Steel

CE 434 – Wood and Masonry Design

CE 435 – Prestressed Concrete Design

CE 437 – Advanced Structural Design in Concrete

CE 482 – Construction Project Planning and Scheduling

CE 483 – Construction Cost Estimating

CE 485 – Construction Materials and Methods

