Bachelor of Architecture and M.S. in Civil Engineering

The New Jersey School of Architecture and the Department of Civil and Environmental Engineering have established a dual degree program that permits students to obtain a B.Arch. and a Master of Science (M.S.) in Civil Engineering with a concentration in construction engineering and management. There is no reduction in the degree requirements for the professional degree in architecture. The dual degree program permits students to obtain an M.S. in Civil Engineering in substantially less time, in some cases with only one additional year of study.

Up to 12 credits of graduate-level coursework may be applied to both the B.Arch. and M.S. Students may take additional courses at the graduate level during their undergraduate career, but these courses do not count toward the undergraduate degree requirements and students are charged at the graduate course rate.

Eligible students should contact the Office of Graduate Studies in their junior or third year regarding the process for admission to the dual degree program. The Office of Graduate Studies will coordinate the process with the undergraduate program director in the School of Architecture and later with the graduate advisor and the Office of Graduate Admissions as the student nears completion of the undergraduate degree. In order to be eligible for initial and continued participation in the dual degree program, the student must maintain a 3.0 cumulative GPA and take the GRE during the senior or final undergraduate year.

B.Arch. Requirements

<table>
<thead>
<tr>
<th>First Year</th>
<th>1st Semester</th>
<th>Term Credits</th>
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<tbody>
<tr>
<td>ARCH 161</td>
<td>Intro Design and Digital Media</td>
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<tr>
<td>HUM 101</td>
<td>English Composition: Writing, Speaking, Thinking I</td>
<td>3</td>
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<tr>
<td>MATH 113</td>
<td>Finite Mathematics and Calculus I</td>
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<td>ARCH 156</td>
<td>Modes of Design Communication II</td>
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<td>ARCH 164</td>
<td>Introduction to Design II</td>
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<td>HUM 102</td>
<td>English Composition: Writing, Speaking, Thinking II</td>
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<td>MATH 105</td>
<td>Elementary Probability and Statistics</td>
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<th>Second Year</th>
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<tr>
<td>ARCH 223</td>
<td>Construction I</td>
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<tr>
<td>ARCH 251</td>
<td>History of Architecture I</td>
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<tr>
<td>ARCH 263</td>
<td>Architecture Studio I</td>
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<tr>
<td>PHYS 102</td>
<td>General Physics</td>
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<td>PHYS 102A</td>
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<td><strong>Term Credits</strong></td>
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| 2nd Semester | | |
| ARCH 227    | Environmental Control Systems I | 3 |
| ARCH 229    | Structures I | 3 |
| ARCH 252    | History of Architecture II | 3 |
| ARCH 264    | Architecture Studio II | 5 |
| PHYS 103    | General Physics | 3 |
| PHYS 103A   | General Physics Laboratory | 1 |
| **Term Credits** | | 18 |

<p>| Third Year | 1st Semester | |
|-------------|--------------| |
| <strong>Term Credits</strong> | | |</p>
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<td>ARCH 329</td>
<td>Structures II</td>
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<td>ARCH 363</td>
<td>Architecture Studio III</td>
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<td>ARCH 381</td>
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<tr>
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<td>Construction II</td>
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<tr>
<td>ARCH 364</td>
<td>Architecture Studio IV</td>
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<tr>
<td>ARCH 382</td>
<td>History of Architecture IV&lt;sup&gt;1&lt;/sup&gt;</td>
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<td>CS 104</td>
<td>Computer Programming and Graphics Problems</td>
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<td>1st Semester</td>
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<tr>
<td>ARCH 423</td>
<td>Construction III</td>
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<td>ARCH 429</td>
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<td>ARCH 463</td>
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<tr>
<td>ARCH 464</td>
<td>Option Studio II</td>
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<tr>
<td>ARCH 472</td>
<td>Architectural Programming and Project Development</td>
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<td>MGMT 390</td>
<td>Principles of Management</td>
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<td>LIT/HIST/PHIL/STS</td>
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<td>1st Semester</td>
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<tr>
<td>ARCH 563</td>
<td>Comprehensive Studio I&lt;sup&gt;2&lt;/sup&gt;</td>
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<tr>
<td>ARCH 558</td>
<td>Professional Architectural Practice</td>
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<td>HSS 4XX Capstone</td>
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<tr>
<td>ARCH 561</td>
<td>Integrated Studio Seminar</td>
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<td>Comprehensive Studio II</td>
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<td>Free Elective</td>
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<td></td>
<td><strong>Term Credits</strong></td>
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**Total Credits** 163

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<sup>1</sup> ARCH 251 History of Architecture I satisfies 3 credits of the English Composition and Cultural History GUR for B.Arch. majors; ARCH 382 History of Architecture IV satisfies the Open Elective in Humanities and Social Sciences GUR for B.Arch. majors.

<sup>2</sup> To be taken concurrently with comprehensive studio.

<sup>3</sup> ARCH 565 Comprehensive Studio Lab must be taken concurrently with upper level studio ARCH 563 Comprehensive Studio I or ARCH 564 Comprehensive Studio II.
## Electives

<table>
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<tr>
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<td><strong>Social Sciences (lower-level GUR)</strong></td>
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<td>Select six credits from the following:</td>
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<tr>
<td>ECON 265</td>
<td>Microeconomics</td>
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<tr>
<td>or R220 101</td>
<td>Intro To Econo-Micro</td>
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<tr>
<td>ECON 266</td>
<td>Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>or R220 102</td>
<td>Intro To Econ-Macro</td>
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<tr>
<td>EPS 202</td>
<td>Society, Technology, and the Environment</td>
<td>3</td>
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<tr>
<td>STS 258</td>
<td>Technology, Society and Culture: A Global View</td>
<td>3</td>
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<tr>
<td>R070 203</td>
<td>Intro Phys Anth &amp; Arch</td>
<td>3</td>
</tr>
<tr>
<td>or R070 204</td>
<td>Intro Cultural Anthro</td>
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<tr>
<td>R790 201</td>
<td>American Government</td>
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<td>or R790 202</td>
<td>America &amp; The World</td>
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<tr>
<td>R830 101</td>
<td>Principles Of Psychology I</td>
<td>3</td>
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<tr>
<td>or R830 102</td>
<td>Prin Of Psychology</td>
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<tr>
<td>R920 201</td>
<td>Intro Sociology I</td>
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<td>or R920 202</td>
<td>Sociology II</td>
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<tr>
<td>R202 201</td>
<td>Intro Criminal Justice</td>
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<td><strong>English Composition and Cultural History (lower-level) GUR</strong></td>
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<tr>
<td>HUM 211</td>
<td>The Pre-Modern World</td>
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<td>HUM 212</td>
<td>The Modern World</td>
<td>3</td>
</tr>
<tr>
<td>HIST 213</td>
<td>The Twentieth-Century World</td>
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<tr>
<td><strong>Humanities and Social Sciences Electives (upper-level) GUR</strong></td>
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<td>Select one of the following:</td>
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<tr>
<td>LIT 3XX</td>
<td>Literature course</td>
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<tr>
<td>HIST 3XX</td>
<td>History course</td>
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<td>PHIL 3XX</td>
<td>Philosophy course</td>
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<tr>
<td>R350 XXX</td>
<td>English Literature (STS approved) course</td>
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<tr>
<td>R352 XXX</td>
<td>American Literature (STS approved) course</td>
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<tr>
<td>R510 XXX</td>
<td>History (STS approved) course</td>
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<td>R512 XXX</td>
<td>American History (STS approved) course</td>
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<tr>
<td>R730 XXX</td>
<td>Philosophy (STS approved) course</td>
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<tr>
<td><strong>Natural Sciences GUR</strong></td>
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<tr>
<td>Select at least seven credits, including a laboratory experience, from the following:</td>
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<td><strong>Biology Courses</strong></td>
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<tr>
<td>R120 101</td>
<td>General Biology</td>
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<td>R120 102</td>
<td>General Biology</td>
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</tr>
<tr>
<td>R120 109</td>
<td>Basic Plant Science</td>
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<td>R120 110</td>
<td>Basic Plant Sci Lab</td>
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<tr>
<td>R120 205</td>
<td>Environmental Issues</td>
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<td>R120 206</td>
<td>General Horticulture</td>
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<td>R120 207</td>
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<td>R120 208</td>
<td>Human Sexuality</td>
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<td>R120 237</td>
<td>Environmental Microbiology</td>
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<tr>
<td>R120 241</td>
<td>Anatomy &amp; Physiology</td>
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<td>R120 242</td>
<td>Anatomy &amp; Physiology</td>
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<td><strong>Chemistry Courses</strong></td>
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<tr>
<td>CHEM 122</td>
<td>Fundamentals of Chemical Principles II</td>
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<td>CHEM 124</td>
<td>General Chemistry Laboratory</td>
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<td>CHEM 125</td>
<td>General Chemistry I</td>
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<td>CHEM 126</td>
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**Physics Courses**

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<tr>
<td>PHYS 102</td>
<td>General Physics</td>
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<td>PHYS 102A</td>
<td>General Physics Laboratory</td>
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<tr>
<td>PHYS 103</td>
<td>General Physics</td>
</tr>
<tr>
<td>PHYS 103A</td>
<td>General Physics Laboratory</td>
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<tr>
<td>PHYS 111</td>
<td>Physics I</td>
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<td>PHYS 111A</td>
<td>Physics I Laboratory</td>
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<td>PHYS 121</td>
<td>Physics II</td>
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<tr>
<td>PHYS 121A</td>
<td>Physics II Laboratory</td>
</tr>
<tr>
<td>PHYS 202</td>
<td>Introductory Astronomy and Cosmology</td>
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<tr>
<td>PHYS 202A</td>
<td>Astronomy and Cosmology Laboratory</td>
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<td>PHYS 203</td>
<td>The Earth in Space</td>
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**Geology Courses**

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<tr>
<td>R460 101</td>
<td>Intro To The Earth</td>
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<tr>
<td>R460 103</td>
<td>Planet Earth</td>
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<td>R460 104</td>
<td>Planet Earth Lab</td>
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<td>R460 206</td>
<td>Env Geology</td>
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<td>R460 207</td>
<td>Env Geology Lab</td>
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**Open Elective in Humanities and Social Sciences (upper-level)**

Select one of the following:  

<table>
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<tr>
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<tbody>
<tr>
<td>ENG 3XX</td>
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<td>HSS 3XX</td>
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<tr>
<td>THTR 3XX</td>
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<td>LIT 3XX</td>
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<tr>
<td>HIST 3XX</td>
<td>History course</td>
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<tr>
<td>PHIL 3XX</td>
<td>Philosophy course</td>
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<tr>
<td>STS 3XX</td>
<td>Science, Technology and Society course</td>
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Any 300-level Rutgers-Newark courses in humanities, social sciences, fine arts, or performing arts

1. Students may also take approved introductory courses at Rutgers-Newark.

**M.S. in Civil Engineering Requirements**

(30 credits)

**Bridge Courses**

Select 10 credits from the following:  

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<tr>
<td>CE 200</td>
<td>Surveying</td>
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<td>CE 200A</td>
<td>Surveying Laboratory</td>
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<tr>
<td>CE 501</td>
<td>Introduction to Soil Behavior</td>
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<tr>
<td>MATH 105</td>
<td>Elementary Probability and Statistics</td>
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**Courses Counting Toward Both Degrees**

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<th>Course</th>
<th>Description</th>
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<tr>
<td>ARCH 650</td>
<td>Economy of Building</td>
</tr>
<tr>
<td>ARCH 651</td>
<td>Real Estate Analysis for Architects</td>
</tr>
<tr>
<td>ARCH 647</td>
<td>Special Topics in Computer Applications</td>
</tr>
<tr>
<td>MIS 645</td>
<td>Information Systems Principles</td>
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<tr>
<td>or ARCH 675</td>
<td>Elements of Infrastructure Planning</td>
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**Civil and Environmental Engineering Electives**

Select two of the following:  

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<tr>
<td>CE 615</td>
<td>Infrastructure and Facilities Remediation</td>
</tr>
<tr>
<td>CE 631</td>
<td>Advanced Reinforced Concrete Design</td>
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<td>Course</td>
<td>Title</td>
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<tr>
<td>CE 642</td>
<td>Foundation Engineering</td>
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<tr>
<td>CE 702</td>
<td>Special Topics in Civil Engineering</td>
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<tr>
<td>CE 711</td>
<td>Methods Improvement in Construction</td>
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<tr>
<td>ENE 662</td>
<td>Site Remediation</td>
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Total Credits 31

1 Bridge courses are required as prerequisites for admission to the M.S. program. These courses may count as free electives in the B.Arch., but do not count toward the M.S.