Number & Title of Course: ARCH 213A BUILDING STRUCTURES AND SEISMIC DESIGN 3 UNITS

Course Description: a: Investigation and design of elements and systems for building structures; applied mechanics, strength of materials, structural investigation as a design tool. b: Investigation and design of structure systems: their resistance to seismic and wind forces and integration.

Course Goals & Objectives:
- To develop informed intuition for structures.
- To introduce underlying concepts, formulas, and theory of structures.
- To introduce the 4 Ss of structure: Strength, Stiffness, Stability, Synergy.
- To facilitate effective communication with structural engineers.
- To introduce loads acting on buildings: gravity, wind, seismic, thermal.
- To introduce the effect of dead load (DL) and live load (LL).
- To introduce graphic methods to visualize the effect of loads.
- To introduce stress types: tension, compression, bending, shear, torsion

Required Student Performance Criterion addressed:

<table>
<thead>
<tr>
<th>B.9 Structural Systems</th>
<th>Met</th>
<th>Not Met</th>
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</thead>
</table>

Additional Student Performance Criterion addressed:

<table>
<thead>
<tr>
<th>A.1 Communication Skills</th>
<th></th>
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<tbody>
<tr>
<td>A.2 Design Thinking Skills</td>
<td></td>
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<tr>
<td>A.7 Use of Precedents</td>
<td></td>
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</tbody>
</table>

Topical Outline (include percentage of time in course spent in each subject area):
- Structure design (40%)
- Structure analysis (60%)

Textbooks/Learning Resources:

FOR OFFICE USE ONLY

Faculty Recommendation
- ☐ Substitution Approved
- ☐ Substitution Denied

Faculty Name (printed) ___________________________ (signature) ___________________________

Comment _____________________________________________________________

Date ______________

Director of Undergraduate Programs ___________________________ Date ______________

Hadrian Predock

Comment _____________________________

Date ______________