

## FLORIDA STATE COLLEGE AT JACKSONVILLE

## COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: BCN 2405

COURSE TITLE: Introduction to Structures

PREREQUISITE(S): None

COREQUISITE(S): None

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 3

CONTACT HOUR BREAKDOWN:

    Lecture/Discussion: 3

    Laboratory:

    Other \_\_\_\_\_:

FACULTY WORKLOAD POINTS: 3

STANDARDIZED CLASS SIZE ALLOCATION: 30

CATALOG COURSE DESCRIPTION:

An introductory course in the evaluation of structural behavior as it relates to buildings, the properties of structural materials, and the structural behavior of load resisting members.

SUGGESTED TEXT(S): Applied Statics and Strength of Materials, 2nd ed. Spiegel and Limbrunner. Englewood Cliffs, NJ: Prentice Hall.

IMPLEMENTATION DATE: Fall Term, 2007 (20081)

REVIEW OR MODIFICATION DATE: Fall Term, 2008 (20091) - Outline Review 2007

## COURSE TOPICS

CONTACT HOURS  
PER TOPICCOURSE SCHEDULE

<u>Week</u>	<u>Topics</u>	
1	Introduction, Vectors, Force Systems	4
2	Resultant of Forces, Moments of Force	4
3	Equilibrium of Forces	4
4	Trusses, Method of Joints, Method of Sections	4
5	Analysis of Frames	4
6	Centroid, Moment of Inertia, Radius of Gyration	4
7	Stresses & Strains, Hook's Law	4
8	Beams, Shear and Moment Diagrams	4
9	Bending and Shear Stresses, Beam Analysis	4
10	Design of Steel and Timber Beams	4
11	Beam Deflections, Curvature	3
12	Analysis and Design of Steel/Timber Columns	2

PROGRAM TITLE: Building Construction Technology

COURSE TITLE: Introduction to Structures

CIP NUMBER: 0615.100101

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S): TITLES(S):

10.0 PERFORM TESTS AND INSPECTIONS--The student will be able to:

- 10.01 Conduct concrete impact hammer test.
- 10.02 Conduct concrete slump test.
- 10.03 Conduct concrete air content test.
- 10.04 Conduct sieve and hydrometer analysis test.
- 10.05 Conduct concrete unit weight test.
- 10.06 Conduct unit weight of aggregate test.
- 10.07 Calculate fineness modules.
- 10.08 Conduct lumber moisture content test.
- 10.09 Conduct liquid and plastics limits tests.
- 10.10 Check concrete placing and consolidation procedures.
- 10.11 Conduct moisture content test on soil.
- 10.12 Check form work.
- 10.13 Conduct moisture density test.
- 10.14 Calculate percentage of compaction.
- 10.15 Conduct density of material in place tests.
- 10.16 Sample, make, cure and test concrete compressive strength specimen.
- 10.17 Conduct chemical analysis of water.
- 10.18 Check reinforcing steel and placing.
- 10.19 Inspect placing of fill and compaction procedures.
- 10.20 Conduct compressive strength test on concrete blocks.
- 10.21 Conduct roofing test.
- 10.22 Make mortar cubes and perform compressive strength test.
- 10.23 Conduct soundness test.
- 10.24 Conduct specific gravity tests.
- 10.25 Sample, make, cure and test flexural strength specimen.
- 10.26 Prepare Marshall test specimens.
- 10.27 Conduct unconfined compression test.
- 10.28 Conduct density test of Marshall test specimens.
- 10.29 Calculate air voids and V.M.A. values.
- 10.30 Calculate bitumen extraction test.
- 10.31 Conduct C.B.R. test.
- 10.32 Conduct California sand equivalent test.
- 10.33 Conduct Rice specific gravity tests.
- 10.34 Conduct Marshall stability and flow tests.
- 10.35 Check asphalt mixing plant.
- 10.36 Conduct abrasion test.
- 10.37 Conduct permeability test.
- 10.38 Conduct triaxial compression test.



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

<i>Section 1</i> COURSE PREFIX AND NUMBER: <u>BCN 2405</u>	SEMESTER CREDIT HOURS: <u>3</u>
COURSE TITLE: <u>INTRODUCTION TO STRUCTURES</u>	

*Section 2*  
 TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	<input type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input checked="" type="checkbox"/> AS Professional Elective	<input type="checkbox"/> AAS Required Professional Course	<input type="checkbox"/> Technical Certificate
<input type="checkbox"/> Other _____		
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)		

*Section 3 (If applicable)*  
 INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

*Section 4*  
 INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input checked="" type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input checked="" type="checkbox"/> Scientific Method of Inquiry
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy	<input type="checkbox"/> Ethical Judgment	<input type="checkbox"/> Working Collaboratively

	LEARNING OUTCOMES	METHOD OF ASSESSMENT
•	STUDENT WILL BE ABLE TO UNDERSTAND THE PURPOSE AND USE OF THE DIFFERENT TESTS REQUIRED IN CONSTRUCTION	LECTURE/PROJECTS/EXAMS
•	HAVE THE ABILITY TO EVALUATE THE STRUCTURAL COMPONENTS OF A BUILDING	LECTURE/PROJECTS/EXAMS
•	UNDERSTAND THE REASONS AND PRACTICES OF THE STRUCTURAL COMPONENTS IN CONSTRUCTION	LECTURE/PROJECTS/EXAMS
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*Section 6*  
 Name of Person Completing This Form: JOHN ADCOX                      Date: 9/01/06