

# Hudson County Community College

**Course:** CNM-201

**Course Title:** Introduction to Basic Structures

**Credit:** 3

**Instructor:**

**Day(s) and Time (s):**

**Location**

**Office Hours:**

**Office Location:**

**Email:**

**Course Description:** The course provides students with a basic knowledge of structural analysis and design for buildings and other structures. Students investigate the behavior of structural systems and elements through design exercises, case studies and load testing of models. Students design structures using, concrete steel and masonry.

**Homework:** Homework assignments are given every week.

**Course Prerequisite:**

**Student Learning**

**Outcome:** Upon successful completion of this course students should be able to:

- Evaluate quality and type of structure.
- Understand basic concepts of Mechanics.
- Apply design principles to engineered structures.
- Illustrate free body diagrams that accurately identify internal and external forces on structural members.
- Select appropriate sizes for simple steel and reinforced concrete members.
- Read structural drawings with accuracy.

- Reference books:**
1. “Engineering Mechanics-STATICS”  
R C Hibbeler -12<sup>th</sup> Edition
  2. Design of Reinforced Concrete  
Jack C. McCormac, Russell H. Brown -9<sup>th</sup> Edition
  3. AISC Manual – 14<sup>th</sup> Edition

**Attendance:** The college policy is generally that a student may fail a course due to lack of attendance if she/he missed more than 6 hours of instructional time for a 3-credit course.

<b>Grading Policy:</b>	Attendance	5%
	Homework	35%
	Midterm	25% (Session 9)
	Final Exam	35% (Session 15)

**Breakdown of Grading:**

<b>Above 85%</b>	<b>=A</b>
<b>75-85%</b>	<b>= B</b>
<b>65-74%</b>	<b>= C</b>
<b>55-64%</b>	<b>= D</b>
<b>Below 50%</b>	<b>Fail</b>

**Cell Phone Use Policy:** Cell phones should be on manner mode. In case of emergency, notify me and then leave. Leaving classroom for non-emergency calls will result a zero grade in one test. NO texting during lectures or exams! Cell phones may NOT be used during exams.

**Remote Learning:** Prepare yourself for remote learning by arranging audio video system. Be in front of your systems until the end of class. If you need to leave or need a break, raise your hand. Download Zoom in your computers. Be familiar with Zoom before the class. Check your emails periodically.

**Mandatory Use of HCCC Email Address:**

Members of the HCCC community are required to check their official HCCC email address in order to stay current with College and course communications. All college business communication between faculty, students, and staff must be sent via an official HCCC email address. If an employer or student elects to forward or link his/her HCCC email to a separate and private account, that individual remains responsible for all material transmitted to that account. Employees of HCCC shall not be responsible for any

material that remains undelivered, due to defects in the private non-HCCC accounts. Failure in the operations of private email accounts shall not be cause for excuse from communications between the students and the employee. Students that encounter difficulty with HCCC email should view the FAQ's section on the Portal.

**Incomplete:**

An INCOMPLETE grade for the course is given under specific conditions when a student, because of serious and unexpected reasons, cannot complete the requirements of the course. For example, if a student did not attend the final because of illness his or her excuse must be verified by a physician. Other absences from other assigned activities must be made up at another appointed time. To arrange for an incomplete grade, the student must see the instructor before final exam, so proper documentations could establish and submitted to Division and The office of Academic Affairs.

**Disability Support Services:**

Students with disabilities who believe that they might need accommodations in this class are encouraged to contact Disability Support Services at (201) 360-4157, as soon as possible to better ensure that such accommodations are implemented in a timely fashion. All disabilities must be documented by a qualified professional such as a Physician, Licensed Learning Disabilities Teacher Consultant (LDTC), Psychiatrist, Psychologist, Psychiatric Nurse, Licensed Social Worker or Licensed Professional Counselor, who is qualified to assess the disability that the student claims to have and make recommendations on accommodations for the student. All information provided to the Disability Support Services Program will be confidential between the program, professors involved with the student, and individual student.

**Academic Integrity Standards:**

Academic integrity is central to pursuit of education. For students at HCCC, this means maintaining the highest ethical standards in completing their academic work. In doing so, students earn college credits by their honest efforts. When they are awarded a certificate or degree, they have attained a goal representing genuine achievement and can reflect with pride on their accomplishment. This is what gives college education its essential value.

**Violations of the principals of academic integrity include:**

- Cheating on exams
- Reporting false research data or experimental results
- Allowing other students to copy one's work to submit to instructors
- Communicating the contents of an exam to other students who will be taking the same test

- Submitting the same project in more than one course, without discussing this first with instructor
- Submitting *plagiarized* work. *Plagiarism* is the use of another writer's words or ideas without properly crediting that person. This unacknowledged use may be from published books or articles, the Internet, or another student's work.

**Violation of Academic Integrity:**

When students act dishonestly in meeting their course requirements, they lower the value of education for all students. Student who violate the college's policy on academic integrity are subject to failing grades on exams or projects, or for the entire course. In some cases, serious or repeated instances of academic integrity violations may warrant further disciplinary action.

Detailed information on the College's Academic Integrity policy may found in the *HCCC Student Handbook*. The handbook also contains useful information for students on completing research projects and avoiding plagiarism.

# Introduction to Basic Structures (CNM 201)

## *Tentative Course Schedule*

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1. Introduction to the course, grading policy, course requirements.
  
2. Fundamentals  
Mechanics and its types  
Vector Operations
  
3. Static Equilibrium  
Moment of a force
  
4. Equilibrium of a Rigid body  
Free body diagram  
Support reactions
  
5. Structural Analysis  
Loads on structures  
Supports  
Internal Stability  
Static Determinacy
  
6. Truss definition & use  
Zero stress members  
Method of joints  
Method of sections
  
7. RCC Beams & Frames  
Bending Moment & Shear  
Bending Moment & Shear Force diagram
  
8. **Exam 1 (Midterm)**

9. Analysis of RCC Beams & Frames  
Deflections in RCC Beams
  
10. Introduction to Steel structures  
Design philosophies  
Loads  
AISC Steel Construction Manual  
Most Economical shape
  
11. Tension members (Steel)  
Compression members (Steel)
  
12. Introduction to Reinforced Concrete Design (RCC)  
Basic Principles of Design (RCC)
  
- 13.. Working Stress Method (RCC)  
Ultimate Strength Method (RCC)  
Design of RCC slab
  
14. Design of RCC beams  
Design of RCC columns  
Design of RCC footings  
Revision
  
15. **FINAL EXAM**