* **Syllabus - DESN221 Statics**

**Ivy Tech Community College of Indiana**

**Wabash Valley Region**

**School of Technology**

**Design Technology Program**

**Spring 2014 Syllabus**

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 **Course Number:** DESN 221 **Course Title:** Statics

**Section Number:** 00G **Prerequisites:** MATH 121/131/134/137

**Credits:** 3 **Contact Hours:** 4

**Location:** Internet **Class Time:** Internet

**Instructor:** Jianren Rong **Instructor Office:** T138L (CWD)

**Email:** jrong@ivytech.edu **Phone:** 812-298-2486

**Office Hours:** M - R 10:00-12:00

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**Course Description:**

Studies applied mechanics dealing with bodies at rest without the use of calculus. Covers units, vectors, forces, equilibrium, moments and couples, planar force systems, distributed forces, analysis of structures, and friction.

**Major Course Learning Objectives:**

1. Determine the resultant of multiple force systems using vector analysis. [b, c, e, f]

2. Determine the reactive forces for structures in equilibrium including those with distributed loads. [b, c, e, f]

3. Analyze trusses and frame systems. [b, c, e, f]

4. Determine friction forces and coefficients to analyze static systems. [b, c, e, f]

**Course Content:**

Topical areas of study include:

Unit systems Vectors for analysis

Equilibrium Newton’s Law

Moment Free-body diagrams

Forces in truss system Frame system

Friction forces

Use moment and forces to solve for unknowns in a system

Resolve parallel forces, non-parallel forces, couples and distributed loads

**Text and Materials:**

Statics and Strength of Materials; 2nd Edition by Cheng

ISBN: 9780028030678

Scientific Calculator

**Course Calendar**

We will use first five chapters of the textbook for this course.

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Content** | **Chapter** | **Linking to Course Objectives** |
| 1 | Course Introduction, Syllabus Study |  |  |
| 1 – 3 | Fundamental Concepts & Principles | 1 | 1,2, |
| 4 – 6 | Resultant of Coplanar Force Systems | 2 | 1,2, |
| 7 – 10 | Equilibrium of Coplanar Force Systems | 3 | 1,2, |
| 9 | Spring Break |  |  |
| 11 – 14  | Analysis of Structures | 4 | 1,2,3 |
| 15 - 16 | Friction | 5 | 1,2,3,4 |
| Final | Final Exam |  |  |

**Method of Evaluation:**

 Students will be evaluated by chapter questions, chapter problems and a final exam. The final exam is a paper based, proctored exam, it’s also open book. The distributions of the final grade are:

Chapter Homework Problems - 50%

Chapter Question Tests - 20%

Final Exam (proctored exam) – 30%

The final grade is the weighted accumulation of points you earn from the chapter tests, chapter problems and the final exam using the distribution weights specified above:

**Course Grading:**

Exams are graded on 100 points scale. Each problem will be evaluated for completeness and clarity. The solution logic should be understandable and with correct numerical answer. The resulting percentage will determine the overall grade. The following grading scale will be use:

100% to 90% = A

89% to 80% = B

79% to 70% = C

69% to 60% = D

59% to 0% = F

**Course Material Delivery**

 We use Blackboard system as the primary tool in teaching online courses, and also use Blackboard on management of on campus courses. There are two ways to access Blackboard. (1) go to Campus Connect (cc.ivytech.edu) portal and click Blackboard. Once you log in your Campus Connect, you’re able to register classes, pay fees, order textbook and get many other services from the college. (2) Go to [https://online.ivytech.edu](https://online.ivytech.edu/). All classes you are taking show in Blackboard, both face to face and online class.

When you see this syllabus, you’re already in Blackboard. In this learning system, you can:

 Obtain chapter learning guidelines, homework assignments, other learning materials;

 Communicate with teacher or classmates;

 Participate in the class activities;

 Submit homework and take tests

 Check grade

It is recommended that you spend some time to familiarize the basic functions of Blackboard

**Attendance and Class Participation**

Attendance and class participation are very important. Please keep these three things in mind:

 Students who don’t participation in the class the first week will be dropped from the class as Never – Attend;

 The Last Date to Withdraw from the class is April 12, 2014 (Saturday). After this date, a grade must be given to everybody even an F grade. So if you need to withdraw from the class, do it before the date.

**Methods to Submit Homework**

 In Blackboard, Class Session tab, there are links of all assignments. Due dates are clearly marked. Use the links in the assignment area to turn in your finished homework.

 For electronic format files, such as word processed files, AutoCAD drawings, they’re ready to be sent;

 For paper based work, you need to scan them and send. It’s recommended to use PDF format to make the scan files smaller.

**Communication**

 Sending messages In Blackboard using My Messages tab is the preferred way of class communication, and you can make phone calls too. Students can expect a response within 36 hours.

**Make Up & Late Work Policy**

Turning in work late can impair student’s chances of success in a course. Students should strive to submit the work for their courses by the specified deadline. However, Ivy Tech Community College – Wabash Valley understands that emergencies do happen and has established the following policy to apply to all classes originating from the region.

 When an emergency other than one personal to the student occurs (for example, a natural disaster, a failure in the College’s computer systems that prevents assignments from being submitted or something similar that affects all of the students in a class equally), faculty will adjust the timing of assignment due dates to compensate.

 Personal emergencies include illness, accidents, and family emergencies. When a personal emergency occurs that makes it impossible for a student to submit a graded assignment on time, **faculty will accept work late usually up to one week after the due date, and the late work will receive 15% deduction of points.**

 Planned events (vacation, wedding, etc.) are not considered emergencies, so late work submissions are not accepted. Students can work ahead on assignments.

**Design Technology Program Competencies**

a) Computer Aided Design and Drafting knowledge & techniques. Apply the use of CAD software in solving design technology problems and to generate architectural/mechanical drawings.

b) Apply STEM to tech problems. Apply knowledge of mathematics, science, engineering, and technology to solve design technology problems.

c) Experiment, Measure, & Analyze. Ability to interpret and analyze information from various sources, then integrate the information into solving design technology problems.

d) Teamwork – Function effectively as a member of a technical team.

e) Identify and Solve Problems – Identify, analyze, and solve narrowly defined technical problems.

f) Communication – Apply written, oral and graphical communication skill in both technical and non-technical environments; identify and use appropriate tech literature.

g) Lifelong learning – Understand the need for , and engagement in, self-directed continuing professional development

h) Professional/Ethical/Diversity – Demonstrate understanding of and commitment to address professional and ethical responsibilities, including a respect for diversity.

i) Quality, Continuous Improvement – Demonstrate a commitment to quality, timeliness, and continuous improvement.

**Academic Honesty Statement**

 The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement. Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

**Right of Revision**

The college reserves the right to change any statements, policies or scheduling as necessary. Students will be informed promptly of any and all changes.

**Copyright Statement**

 Students shall adhere to the laws governing the use of copyrighted materials. They must insure that their activities comply with fair use and in no way infringe on the copyright or other proprietary rights of others and that the materials used and developed at Ivy Tech Community College of Indiana contain nothing unlawful, unethical, or libelous, and do not constitute any violation of any right of privacy.

**ADA Statement**

Ivy Tech Community College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classroom

**Safety and Violence Prevention Notice**

It is imperative that if you see or hear a threat that you report it immediately. Comments such as a statement to "get even", a threat to kill or injure someone, or to blow up the building are examples of threatening or intimidating language. The comment does not need to be made directly to the potential victim. Individuals who express violent words or behaviors should be referred to the Dean of Student Affairs or Human Resources after security (“0” from school phone or 299-1121 and then “0” from cell phone) is notified.

It is also important to note that in the event of any emergency situation you should dial 911 immediately. This includes medical problems with students or employees. Dialing 911 is the quickest and most effective way to ensure that the person receives appropriate medical attention.

Any student who believes he/she may need assistance with evacuation in the event of an emergency situation should notify Jamie Frey at 298-2282 or jfrey@ivytech.edu.

**2014 SPRING SEMESTER (133)**

January 13, 2014 (Monday) Spring Semester Classes Begin

January 20, 2014 (Monday) **Martin Luther King, Jr. Day– Campus Closed**

January 21, 2014 (Tuesday) Classes Resume

March 9-16, 2014 (Sunday-Sunday) **Spring Break No Classes**

March 17, 2014 (Monday) Classes Resume

April 12, 2014 Last Date to Withdraw for 16 week classes

May 5-10, 2014 (Monday-Saturday) **FINALS WEEK**

May 8, 2014 (Thursday) Graduation

May 10, 2014 (Saturday) Spring Semester Classes Ends