New York City College of Technology
Entertainment Technology Department
300 Jay Street, Room V-205 Brooklyn, NY 11201
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ENT-3410 Stage Rigging and Mechanics, Section D265

Pre-requisites: ENT 3320 Technical Production
Fall 2015
Professor: John McCullough
Office: V121
Email: jmccullough@citytech.cuny.edu
Office Hours: Tuesdays and Thursdays, 10am-noon

Class Meeting Time:

Fridays, 2:30-5:00pm, Room V124

Course Description:

The course is designed to familiarize the student with the basic principles of rigging, the equipment in general use, and the appropriate safety practices and procedures. By the end of the course the student should be able to:

- Estimate weights of objects and determine loads imposed on the rigging system
- Identify and properly connect essential rigging hardware
- Tie a selection of important knots
- Operate a counterweight rigging system
- Rig a theatrical aluminum truss on chain hoists
- Specify complete lists of materials required for basic rigging situations

Required Texts:

Stage Rigging Handbook, third edition, by Jay O. Glerum, 7
Backstage Handbook by Paul Carter, 3rd Edition. Broadway Press. ISBN: 978-0911747393

Recommended Reading:

Wire Rope Users Manual, Wire Rope Technical Board, 1993
Entertainment Rigging, Harry M. Donovan, 2002

Required Equipment:

A scientific calculator with pi, root, square, and trig functions; 25' tape measure, pen or pencil, tie line.
NOTE: You are required to bring your equipment to every class meeting!

Attendance/Promptness:

If you have a legitimate reason for missing a class/assignment or if you will be late, you must contact me (see above) before class begins. It is City Tech policy that if you have three unexcused absences, you will fail the class.

Grades:

Your grade will be determined as follows:

Participation	10%
Homework	35%
Quizzes	5%
Mid-Term Exam	20%
Final Exam	20%
System Design Project	10%

NOTE: If you miss a quiz or test due to an unexcused absence, you will receive a zero for that test or quiz. Quizzes are typically given to ensure that you do the reading, and may contain questions not covered in class. Do the reading!

The rating of participation is completely at the instructor's discretion, and includes evaluation of attention, effort, improvement, contribution to discussions, and willingness to practice hands-on skills.

The midterm and final exams are administered as open-book tests. The textbook, handouts, notes, and completed homework assignments are allowed for the student's reference.

Homework will be assigned for every lecture, and will be due the following week. Keep up with the homework, as you will be able to use your corrected assignments as reference during the mid-term and final.

ENT-3410 Stage Rigging and Mechanics Course Outline			
Date	**Day**	**Topic**	**Homework Due**
1.30	F	Intro, Math Review, Forces, Equilibrium, Free Body Diagram	
2.6	F	Stress/Strain, Bridles, Resultants, Allowable Loads	Homework 1 Read *SRH* pp 1-41
2.13	F	Mechanical Advantage, Block and Tackle	Homework 2 Read *SRH* pp 42-64
2.20	F	Hemp Rigging	Homework 3 Read *SRH* pp 65-111
2.27	F	Counterweight Rigging	Homework 4 Read *SRH* pp 112-165
3.6	F	Motorized Rigging and Chain Hoists	Homework 5 Read *SRH* pp 166-188
3.13	F	Problem Solving and Cable Terminations	Homework 6 Read *SRH* pp 189-228
3.20	F	Mid-Term (John Out)	
3.27	F	Truss Rigging, Spanset Technique	Read Truss Handout
4.3	F	No Class – Spring Break	
4.10	F	No Class – Spring Break	
4.17	F	Hardware Specification	Homework 7 Read Hardware Handout
4.24	F	Tracking and Traveling Rigs	Homework 8
5.1	F	Weight Estimation, Center of Gravity	Homework 9
5.8	F	System Design	Homework 10
5.15	F	Project Presentations, Final Review	System Design Project
5.22	F	Final Exam	
Note: Schedule is always subject to change			

Learning Outcomes

After taking this class, the student will be able to...	**This will be demonstrated by...**
• Estimate weights of objects and determine loads imposed on the rigging system	Homework, exams
• Identify and properly connect essential rigging hardware	Homework, exams, lab work
• Tie a selection of important knots	Homework, exams, lab work
• Operate a counterweight rigging system	Homework, exams, lab work
• Rig a theatrical aluminum truss on chain hoists	lab work
• Specify complete lists of materials required for basic rigging situations	Homework, exams, lab work