

USC School of Dramatic Arts

Theatre 425 Dynamics of Technical Theatre
20201—Tues & Thurs—8:00 am-9:50 am
Location: TTL 100

Instructor: Duncan Mahoney

Office: TTL 102

Office Hours: M-F, 10AM-1PM by appointment

Contact Info: dmahoney@usc.edu 213-743-1968

Course Description and Overview

To instruct students in advanced technical direction topics involving the technical analysis and design of moving scenery and theatrical systems.

Learning Objectives

Through lecture, example, and hands-on analytical practice, students will learn mathematical techniques to analyze the forces acting on moving theatrical systems and scenic elements, and then select materials and equipment appropriate for the stress levels to use in those systems and elements. Emphasis will also be placed on appropriate documentation and shop drawings for dynamic systems.

Recommended Preparation: Thtr 438

Required Texts: Mechanical Design for the Stage, Alan Hendrickson.

Recommended texts: none

Grading: 50% homework assignments, 20% midterm, 30% final exam. Exams will be open book and consist of problems similar to those solved in homework; final exam may contain a mechanical system design assignment as well. Grades will be based on the overall numerical percentage of problems solved correctly, and may be curved at the instructors discretion.

Homework: Homework will be assigned at every class session. It will be due at the next class session. We will work through the solution at the beginning of the next class session. If you have not at least attempted the homework, you will not be able to participate effectively, and you will be wasting your time and everyone else's. **DO NOT FALL BEHIND!** If you are sick, turn in your homework at the next class session you are able to attend, but you are also responsible for contacting a classmate or the instructor to get the assignment/s for the next session/s and completing that as well. Because I will be solving the problems in class, late homework will not be accepted under other circumstances. **Bring a pen or pencil to class that is a different color than the one you used to do your homework.**

Note: This class will involve a LOT of math. You may wish to do a brief review of algebra and trig. You will need a **calculator** that can solve powers, roots, and trigonometric functions. **Bring it to class with you.**

Weekly Schedule: (subject to change)

Week 1: Intro to Class, Basic concepts, Safety
Reading due; Preface, Chapters 1 & 13

Week 2 : Acceleration, Actuators
Reading due: Chapters 2 & 14

Week 3: More Acceleration, Speed Reduction
Reading due: Chapters 3 & 15

Week 4: Friction, Shafting
Reading due: Chapters 4 & 16

Week 5: Lifting, Bearings
Reading due: Chapters 5 & 17

Week 6: Power, Force, Wire Rope
Reading due: Chapters 6 & 18

Week 7: Rotational Motion, Cable Drums
Reading due: Chapters 7 & 19

Week 8: Accelerational Torque, Screws
Reading due: Chapters 8 & 20

Week 9: Frictional Torque, Brakes
Reading due: Chapters 9 & 21

Week 10: Lifting Torque, Controls
Reading due: Chapters 10 & 22

Week 11: Power and Torque, Frames and Framing
Reading due: Chapters 11 & 23

Week 12: Combining multiple motions, the Mechanical Design Process
Reading due: Chapters 12 & 24

Week 13: Developing a Design
Reading due: Chapters 25, 26, 27 & 28

Week 14: Design and Stage Machinery
Reading due: Chapters 29, 30, & 31

Week 15: Stage Machinery
Reading due: Chapters 32 & 33

Final Examination Date: 5/13/2020 8:00 am-10:00 am

EXTRA-CURRICULAR COMMITMENTS AND ISPS

Should you choose to participate in any extra-curricular project, such as an Independent Student Production, the SDA administration and faculty will not make allowances or exceptions for absences in class, missed or delayed assignments, home work that is required as preparation for class, or lack of participation in class resulting from your extra-curricular involvement.

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. Website for DSP and contact information: (213) 740-0776 (Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX) ability@usc.edu.

Emergency Preparedness/Course Continuity in a Crisis

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies. See the university’s site on Campus Safety and Emergency Preparedness.

Support Systems:

Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. engemannshc.usc.edu/counseling

National Suicide Prevention Lifeline – 1 (800) 273-8255

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. www.suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. engemannshc.usc.edu/rsvp

Sexual Assault Resource Center

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: sarc.usc.edu

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086

Works with faculty, staff, visitors, applicants, and students around issues of protected class. equity.usc.edu

Bias Assessment Response and Support

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. studentaffairs.usc.edu/bias-assessment-response-support

The Office of Disability Services and Programs

Provides certification for students with disabilities and helps arrange relevant accommodations. dsp.usc.edu

Student Support and Advocacy – (213) 821-4710

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. studentaffairs.usc.edu/ssa

Diversity at USC

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. diversity.usc.edu

USC Emergency Information

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. emergency.usc.edu

USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime.

Provides overall safety to USC community. dps.usc.edu