

CTPR 499

SPECIAL TOPIC: VISUAL EFFECTS PRODUCING

Units: 2 | Recommended Preparation: CTPR 310 or CTPR 425 or CTPR 508

Spring 2024—Wednesdays, 4:00-6:50pm

Classroom: SCA 310

Instructor: Susan Zwerman

Office Hours: By Zoom Appointment

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Teaching Assistant: Shannon Morrall

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Course Description

The art of visual effects continues to grow into a key component for major motion pictures as well as small independent films and television. Students will be exposed to the various types of visual effects methodologies and processes. This course is designed to prepare students to navigate the creative, technical, financial, political and logistical demands encountered when incorporating visual effects into their film projects, from initial pre-production through final completion. This course is recommended for any film student pursuing directing, producing, cinematography, production design, VFX supervision and editing. Students will work in teams to break down, plan, budget, schedule and manage visual effects.

Learning Objectives

By the end of this course students will be able to:

- Understand creative, technical, financial, logistical, and political dynamics of working with visual effects, from initial pre-production through final delivery.
- Discuss how visual effects interface with all departments of a film project.
- Practice guidelines for budgeting and scheduling visual effects for feature films from concept or script through final delivery.
- Chart the management and coordination requirements of the digital pipeline.
- Indicate how to support the creative process as a visual effects producer and represent a film's VFX needs to a director, producer, and studio.
- Present a Studio Presentation Package.

Technological Proficiency and Hardware/Software Required

All work can be done with word processing & spreadsheet programs such as Microsoft Word and Excel.

Required Reading

The Visual Effects Producer Understanding the Art and Business of VFX— 1st Edition, Charles Finance & Susan Zwerman, Routledge

Supplementary Materials

The VES Handbook of Visual Effects— 3rd Edition: Edited by Susan Zwerman and Jeff Okun for the Visual Effects Society, Focal Press

Production Division Attendance Policy:

Absences

Students are expected to be on time and prepared for each class. If you must miss a class, please inform your instructor and SA as soon as possible before class begins. One absence will affect your grade by one portion of a grade (A>A-) Two absences will result with your grade being lowered by one full point (ex: A > B). A third absence will result in your grade being lowered another full point (ex: B >C) and one full point for every additional absence.

Tardiness

One time being late will not affect your grade. Two late arrivals equate to one full absence. (A>A-). Three late arrivals will result in your grade being dropped by two portions (A>B+). Four late arrivals will result in your grade being dropped three portions (one full point: A>B) Lateness of more than 30 minutes will count as an absence.

Students are encouraged to interact with both faculty and SAs outside of class. Please contact your instructor and SA if you have any concerns or questions concerning the course and be sure to let them know in advance if you cannot attend class.

Please notify your lead faculty & SA if your absence or tardiness issue to COVID. To notify the university of a case, please call 213-740-6291 or email covid19@usc.edu. Please see <https://coronavirus.usc.edu/for> USC guidelines about attendance.

Disruptive Student Behavior:

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office of Student Judicial Affairs for disciplinary action.

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

Additional Policies

- The use of computers for notetaking is acceptable.
- The use of cell phones and computers not related to the class will not be allowed.
- Video or audio recording of classes require prior approval.
- Late submission of assignments will result in the loss of a point.

Description and Assessment of Assignments

Assignments will be to analyze and breakdown a visual effects sequence from a theatrical film into shot lists, cost projections and schedules. Students will work in groups on a project basis.

Assignment Submission Policy

Assignments are to be submitted on paper or as pdf. Due dates for assignments to be given in class (refer to Course Weekly Schedule). Assignments from missed classes can be made up but will result in the loss of a point unless a valid reason for missing the class is provided, such as family emergency or illness.

Grading Breakdown

VFX Script/Shot Breakdown	30%
VFX Budget	30%
Final studio presentation	30%
Class participation	10%

Grading Scale

Course final grades will be determined using the following scale

A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

COURSE WEEKLY SCHEDULE

All assignments will be due at the beginning of the next class.

WEEK 1—Wednesday January 10th

Review

- Class syllabus, schedule, and course objectives

Lecture

- Define visual effects versus special effects
- Explain Plates and Elements
- Role & Uses of Visual Effects
- The role and responsibilities of a VFX Producer and the difference between production side vs. facility side
- Explain VFX Dept job descriptions and roles of each: VFX Supervisor/VFX Producer/VFX Director of Photography

Demo

- Types of visual effects and the various elements used to create them. For example: Stop-Motion Animation, Actors in Suits, Puppets/Animatronics, Matte Paintings, Miniatures, Motion Control, Motion and Performance Capture, In-Camera Wire/Practical Effects, and Blue/Green Screen Composites
- Sample of Breakdowns of Shots

ASSIGNMENTS

- **Analyze *The Guardian* script for the types and number of visual effects shots contained.**
- **Reading:**
 - ♦ **Visual Effects Producer *Understanding the Art & Business of VFX* – Chapters 1–4: Basic Technologies, Methodologies & Crew
Chapters 5 (p79-89): Script Breakdown**

WEEK 2 –Wednesday January 17th

Review

- Discussion of reading assignment of Chapters 1-5
- Review The Guardian Script

Lecture

- Discuss the various aspects of analyzing a project for VFX.
- Explain Animatics / Previs / Virtual Set Scouting / Techvis / Postvis

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

Week 2- Continued

Demo

- Example VFX script breakdowns from a script into scenes
Identifying VFX Shots within Scenes and how to number them
- Discuss other systems for numbering and identifying VFX shots.
- Create Schedule
- Storyboards – Fishing Boat Sequence Breakdown from *The Guardian* (cover storyboard, previs element breakdown, dry tank and wet tank)
- Technical Challenges of setting up a Water Tank for Shooting
- Show VFX Breakdown #1 – The Guardian – How it was done

SPEAKER—Previs Facility (TBD)

ASSIGNMENTS

- **Divide students to teams of 3 groups**
- **Assign script and sequence VFX Breakdown #2 (*The Guardian*) for analysis and breakdown by scene, shots & methodologies.**
- **Isolate questions to be answered to inform budget & schedule process.**
- **Reading:**
 - ♦ **Chapter 11 & 12 (p215-238): Various VFX Units, Models and Miniatures, Animatronics, Motion and Performance Capture Units**

WEEK 3—Wednesday January 24th

Review

- Discussion of reading assignment – *The Guardian* Script for VFX Breakdown #2 of shots
- Chapters 11 & 12 (p215-238)

Lecture

- Discuss and Show Excel VFX Breakdown #2 and Storyboards - *The Guardian*
- Modeling for a Production Pipeline
- Two-Dimensional (2D) vs. 2-1/2D vs Three-Dimensional (3D) CGI – Creating a Digital Image
- Budgeting Miniatures or CG Models

Demo

- Examples of design, development & models for characters and environments
- Some Rules for Using Miniatures
- Miniatures vs. Digital Models

SPEAKER— VFX Supervisor (TBD)

ASSIGNMENTS

- **Read Script Pages for *Indian Football* project to do VFX Breakdown #3**

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

- **Reading:**
 - ◆ **Chapter 5 (p89-109): Estimating & Bidding Digital Cost**
 - ◆ **Chapter 6 (p111-129) –Scheduling and Budgeting Production Support (scheduling/strip boards)**

WEEK 4—Wednesday January 31st

Review

- Discussion of reading assignment – Chapters 5 & 6
- Review Script Breakdown #3 (*Indian Football Script*)
- Discuss VFX Shots to do for Breakdown #3 - cover plates to be shot vs digital elements to be created. Show Reference Materials
- Review & discuss questions to be answered in order to proceed with a budget and schedule.

Lecture

- Estimating Design shot and asset cost.
- Discuss VFX Shots Turnover and Delivery Dates for VFX Breakdown #3

Demo

- Show Example of Crowd Breakdowns
- Show Before & After Shots
- Explain types of AI Tools for Visual Effects
- Camera Rig to Shoot BG Plates for LED Wall
- Show BS Car Chase versus LED Car Chase
- Virtual Production, Motion/Performance Capture, Digital Backlot & Simulcam
- Show how AR is used in TV Show

SPEAKER— Virtual Production Supervisor (TBD)

ASSIGNMENTS

- **Breakdown VFX Sequence #3 into shots, plates & assets (*Indian Football Script*)**
- **Reading:**
 - ◆ **Chapter 15 & 16 (p261-296) Integrating VFX with Post Schedule**

WEEK 5—Wednesday February 7th

Review

- Discussion of reading assignment of Chapters 15 & 16
- Questions regarding VFX Sequence #3 Breakdown – Plates and Elements

Lecture

- Scheduling VFX Digital Production – VFX Checklists To Review for prep, aerial, GS work, and general equipment

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

Demo

- Visual Effects Checklist
- Working with Other Departments – SPFX/Stunts/Wardrobe/Hair/Makeup
- Examples for using Motion Capture for Character Animation
- Costs for Mocap Stage
- Applying VFX Techniques in Production
- Some Rules for Good BS/GS
- Examples of Shot Costs for VFX Services
- VFX Shots Delivery Schedule
- Pre-Production VFX & Shoot Calendar Schedule
- Post Production Calendar for TV Series
- VFX Post Turnover Schedule for Episodic TV

Week 5—Continued

SPEAKER— Post Production Supervisor (TBD)

ASSIGNMENT

- **Create a turnover calendar for VFX Breakdown #3**
 - **Reading:**
 - **Chapter 14 (p249-259): VFX Editorial**
-

WEEK 6—Wednesday February 14th

Review

- Discussion of reading assignment Chapter 14
- Review student's turnover schedule for VFX Sequence #3

Lecture

- Working with the VFX Editor – Describe his/her tasks and duties.
- Editorial Temps for Previs & Postvis
- Editorial Reporting Changes and Updates to Facilities
- Benefits of Digital Dailies
- Handing off Shots to VFX Facilities

Demo

- Editorial Counts Sheets
- Editorial Counts Calendar
- Budgeting for Editorial Staff & Equipment
- VFX Turnover Schedule for Film

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

- VFX Shots Delivery Schedule with Dates
- Examples of Performance Capture Underwater

SPEAKER— Senior VFX Editor (TBD) and CG Character Animator

Phil Tippett Studio will present a presentation regarding CGI Animation, Stop Motion Animation and Hybrid connections between the two.

ASSIGNMENTS

- **Continue to refine breakdown, budget, and calendar for VFX Sequence #3**
 - **Reading:**
 - ◆ **Chapter 7 (p131-160): Budgeting The Effects**
 - ◆ **Chapter 13: (p241-248) Digital Workflow in Post and Set Equipment**
-

WEEK 7—Wednesday February 21st

Review

- Discussion of reading assignment of Chapters 7 & 13
- Questions regarding VFX Breakdown #3 (Indian Football Script)

Lecture

- Budgeting VFX Production for all vfx production support in MMB

Demo

- Production Budget: Excel & Movie Magic – Review Chart of Accounts
- Ballpark Cost Guidelines for Crew & Service – Ballpark Estimates
- Creating Excel Workbook contains Budget Shot List and Summary

SPEAKER— DGA 1st AD or UPM (TBD)

ASSIGNMENTS

- **Prepare VFX Budget for On-Set Support for VFX Breakdown #3**
 - **Reading:**
 - ◆ **Chapter 8 (p161-177): The VFX Bible and Database**
 - ◆ **Chapter 17 (p297-307): Changes & Approvals**
-

WEEK 8—Wednesday February 28th

Review

- Discussion of reading assignment of Chapter 8 & 17
- Questions regarding Budget for VFX Sequence #3

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

Lecture

- Technology & Color Pipeline Workflow
- Digital Camera Workflows
- Integrating VFX Shots with Prep and Post Schedules
- IT Database Communications

Demo

- Technical & Editorial Pipeline Diagrams
- IT Budget and Software
- Examples of Databases
- Vendor Tech Specs
- Software for Tracking VFX Shots
- Before and After Shots
- VFX Daily Production Reports
- Weekly Studio Reports
- Shot Status Report & Weekly Status Report
- Change Orders/Approvals Report

SPEAKER—VFX Producer (TBD)

ASSIGNMENTS

- **Continue to refine breakdown, budget, and calendar for VFX Sequence #3**

SPEAKER—VFX Producer (TBD)

WEEK 9—Wednesday March 6th

Review:

- Q&A Regarding VFX Sequence #3

Lecture

- Budgeting Tips
- Discuss The Bidding Package
- Parceling out the VFX Work
- Working with Multiple Facilities
- VFX Breakdown with Storyboards
- Before & after examples of visual effects in features including small, medium & complex difficulty levels.
- Technical Bid Specifications
- VFX Facility Personnel – Executive Producer, Digital Producer, Digital Supervisor, and VFX Coordinator

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- Comparison Facility Bids

Demo

- Before & After Examples of VFX in Features and TV shows
- Protocol and Bidding Documents
- Vendor Bid Request, Bids and Comparisons
- VFX Facility Pipeline Workflow

SPEAKER—VFX Facility (TBD)

ASSIGNMENTS

Reading:

- ◆ Chapter 9 (p181-199): On-Set Operations
 - ◆ Chapter 10 (p201-212): On-Set References
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SPRING BREAK | March 10th—March 17th

Week 10—Wednesday March 20th

Review

- Discussion of reading assignment of Chapters 9 & 10
- Review & discuss student's first draft VFX Production Budget for VFX Breakdown #3

Lecture

- On Set Equipment – Digital Video Assist with Compositing capability
- Data Coordinator (responsible for Element Data Sheets and Camera Tracking Markers on set)
- Reference Balls on Set
- Explain Set Surveying - Photogrammetry/LIDAR / HDRI / Cyberscanning
- Schedule Plate Unit Work (Aerial Plates, Miniature Plates, & Animatronics Plates)
- Communication with Artists

Demo

- On Set Data Sheets
- Show Examples of Photogrammetry/LIDAR/HDRI / Cyberscanning
- Create CG Character from Motion Capture
- Tracking Markers
- Budget Summary combined with Shot & Asset List

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

- Show a stripboard in MMS of VFX Shots – separate out 1st Unit and VFX Unit Strips
- Show One-Liner – VFX Plate Schedule
- Explain the Breakdown Sheet for VFX using MMS and show Day-Out-Of-Days-Report
- Global Currencies
- Tax Incentives
- Budgeting for Stereo VFX

SPEAKER—1st AD & 2nd AD – Specializes in VFX Films (TBD)

SPEAKER—Stereo VFX Facility (TBD)

ASSIGNMENTS

- **Refine VFX Budget including On-Set Production Support, and Tax Incentive (UK)**
- **Reading:**
 - ◆ **Chapter 18 (p309-314): Crossing the Finish Line**
 - ◆ **Chapter 19 (p317-336): Legal Matters**

WEEK 11—Wednesday March 27th

Review

- Discussion of reading assignment of Chapter 18 & 19
- Review Student's Budget & Schedule with Tax Incentives applied.

Lecture

- Studio Presentation
- Vendor Contract Comparison Bids

Demo

- Final Budget Summary
- VFX Turnover Schedules of Shots
- Weekly Status Reports for Studios
- Weekly Hot Cost Report
- Delivery and Review of Post Schedule for Episodic TV
- Post Production Bids
- Tips for a Successful Experience
- On-Set Procedures
- Common Mistakes and Problems
- Example of a pre-planning shot sequence
- PROXi Visualization System
- Pre-Production, On-Set and Post Production Mistakes
- Future Vision Examples
- Info for Studio Cover Letter

SPEAKER—Studio Post Production Executive (VFX) (TBD)

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

ASSIGNMENTS

- **Prepare Studio Presentation: Cover Letter, Budget Summary, VFX Breakdown of Shots with Costs, Budget On-Set Support, Turnover Post Schedule, and Tax Incentives**
- **Reading:**
 - ◆ **Chapter 20 (p337-346): Working Overseas**

WEEK 12—Wednesday April 3rd

Review

- Discussion of reading assignment of Chapter 20
- Review & discussion of student's Studio Presentation Packages

Lecture

- Managing Visual Effects
- Working with a Producer
- Working with a Director - Review List of VFX Shots to be Screened
- Tips for Directors
- Working Overseas – Storyboards for Shooting Units
- Show & Explain Boat work in Thailand
- Encountering Cultural Differences and Language Challenges
- Legal Matters – Vendor Contract
- VPO – Virtual Production Office

Demo

- Editorial Review – Screening Sheets
- Screening Room Equipment & Playback
- Software for Review of VFX Shots
- Software for VFX Review Tools in Screening Room
- Working Overseas - Aerial Units
- Aerial Photography – Helicopter and Drone Work & Costs
- Working Overseas - Boat Photography
- Costs for Helicopter and Drone Work
- Review Studio Presentation
- Assumptions for Cover Letter

SPEAKER—Producer or Director (TBD)

ASSIGNMENT

- **Prepare FINAL Studio Presentation: Cover Letter, Budget Summary, VFX Breakdown of Shots with Costs, Budget On-Set Support, Turnover Post Schedule, and Tax Incentives**

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

WEEK 13 – Wednesday April 10th

PRESENTATIONS—Begin Final Studio Presentations

WEEK 14—Wednesday April 17th

PRESENTATIONS—Continue Final Studio Presentations

WEEK 15—Wednesday April 24th (Last Class)

PRESENTATIONS—Complete Final Studio Presentations

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, [policy.usc.edu/scientific misconduct](http://policy.usc.edu/scientific-misconduct).

Dornsife/The Writing Center:

Students whose primary language is not English should check with The Writing Center at Dornsife which sponsors courses and workshops specifically for international graduate students. <https://dornsife.usc.edu/writingcenter/for-non-native-speakers/>

Safety:

All students are expected to abide by USC School of Cinematic Arts Safety Guidelines. Violations of any of the safety guidelines may result in disciplinary action ranging from confiscation of footage to expulsion from the University.

Stressful Times:

These are stressful times in our country, and Graduate School in and of itself is stressful. I encourage you to take care of yourself and your fellow students. USC provides opportunities for Mindful Meditation <http://mindful.usc.edu> and Mental health counseling is available at the Engemann Student Health Center, 1031 W. 34th Street, 213-740-9355.

SUPPORT SYSTEMS:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

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

Student Health Leave Coordinator – 213-821-4710
<https://policy.usc.edu/student-health-leave-absence/>

Located in the USC Support and Advocacy office, the Health Leave Coordinator processes requests for health leaves of absence and advocates for students taking such leaves when needed.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call

[studenthealth.usc.edu/sexual assault](http://studenthealth.usc.edu/sexual%20assault)

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 | Title IX – (213) 821-8298

equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault, non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symplicity.com/care report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support & Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

CTPR 499 SPECIAL TOPIC: VISUAL EFFECT PRODUCING SYLLABUS

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

ombuds.usc.edu

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

USC Health's 24/7 line: 213-740-9355

USC COVID-19 24-hour hotline: 213-740-6291

Student Affairs Basic Needs Office: basicneeds@usc.edu

COVID-19 positive cases should contact:

USC COVID-19 24 hour hotline: 213-740-6291 • e: covid19@usc.edu

Coronavirus Resources:

Please see the **PRODUCTION PROTOCOLS** and **Student Agreement Issued** for the latest on safe production. <https://coronavirus.usc.edu/>

PLEASE NOTE:

FOOD AND DRINKS (OTHER THAN WATER) ARE NOT PERMITTED IN ANY INSTRUCTIONAL SPACES IN THE CINEMATIC ARTS COMPLEX