

CSE464 - FACIAL EXPRESSION CREATION FOR ANIMATION

Course 11026 – 2020 Summer Term B

University of Washington, Remote Learning

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All students receive a free student copy of Maya and require access to a compatible computer.

Mons + Weds: July 27 to August 19
Zoom Classroom ID: **TBD**

Class Time: 10:30am to 12:20pm

Prerequisite: No prior Maya experience is required.

This 8-session summer class, taught by Gary Faigin, author of *“The Artist’s Complete Guide to Facial Expression,”* trains students in the basics of facial expression, and how to create those expressions on a CG facial model that has been rigged using Faigin’s input. This class is ideal for anyone interested in animation, game design, or mastering the basics of the expressive face, as well as those seeking a hands-on introduction to Maya.

Each class includes a Zoom lecture on the principles of expression featuring Faigin demonstrating while drawing on his digital pad, followed by a digital “lab” demo to be presented in Zoom by the Teaching Assistants that will cover the use of Maya, a 3D software program that is used in production for most animation studios in industry. Teaching Assistants have several years of experience creating and teaching facial expressions construction using 3D characters in UW productions.

Students are introduced to the individual facial muscles used for each cardinal expression, and will be shown how to combine those individual muscle movements to create the six expressions of joy, anger, sadness, fear, surprise, and disgust. Students also pose the various muscle movements reflecting their own faces in a hand mirror and render the poses and expressions in CG. All student work is reviewed during Zoom class sessions and students are given time to correct their expressions, as necessary. Students spend time each week learning remotely with Teaching Assistants who supervise their progress. For extra credit, students may complete one out-of-class assignment, as outlined at the bottom of page 4.

Reference is also made to recent research on facial expression, based on Faigin’s participation in the Facial Expression Research Group (FERG) which, together with the Animation Capstone, is housed in the Animation Research Labs (ARL) at UW.

CLASS READING & MATERIALS LIST

CLASS TEXTBOOK – *“The Artists Complete Guide to Facial Expression”* © 1990, by Gary Faigin, available at the University Bookstore or online at www.amazon.com

FAIGIN FACE BLOG – <http://www.FaiginVFX.com/face-blog> & <http://www.garyfaigin.com/faigin-face-blog> - please review before class begins.

CSE 464 - Facial Expression Creation For Animation

COURSE SYLLABUS



The Six Cardinal Facial Expressions: Surprise, Fear, Disgust, Anger, Sadness & Joy

CLASS #1: INTRO TO FACIAL EXPRESSION; MOVEMENTS OF THE UPPER FACE

July 27

How facial muscles work; active areas of the face; introduction to Maya:

THE EYES & BROW

- Neutral eyes and eyebrows
- The Lids: opening, closing, squint
- Rotation of the eye
- Muscles of the Brow: eyebrow raiser

THE UPPER FACE MUSCLES (Cont):

- The Frown
- The Glare
- The Brow of Distress

Assignment #1: Posing the Muscle Movements around the Eye. Due Class #2.

CLASS #2: MOVEMENTS OF THE MOUTH

July 29

Review of Assignment from Class #1: Posing the Muscle Movements around the Eye

THE CLOSED MOUTH

- Sneering Muscle
- Smiling Muscle
- Frowning Muscle
- Pouting Muscle
- Lip Tightener

THE OPEN MOUTH

- Open Mouth - relaxed
- Lower Lip Stretcher
- Snarl/ Disgust
- Smile

Assignment #2: Posing closed & open-mouth movements. Due Class #3.

CLASS #3: THE CARDINAL EXPRESSIONS—SURPRISE and FEAR August 3

Review of Assignment from Class #2: Posing closed & open-mouth movements

SURPRISE and FEAR

- Posing expressions – coordinating eyes and mouth; levels of intensity
- The difference between Surprise and Fear
- Posing Surprise
- Posing Fear – Most Intense and Less Intense

Assignment #3: Posing Surprise and Fear. Due Class #4.

CLASS #4: THE CARDINAL EXPRESSION—SADNESS

August 5

Review of Assignment from Class #3: Posing Surprise and Fear

SADNESS

- The basics of Sadness – Crying vs. merely Sad
- Posing Crying – Open-mouth and Closed Mouth
- Posing Sadness
- Various degrees of Sadness – Very Sad – front and side views - and Slightly Sad – front and side views

Assignment #4: Posing Sadness. Due Class #5.

CLASS #5: THE CARDINAL EXPRESSION—ANGER

August 10

Review of Assignment from Class #4: Posing Sadness

ANGER

- The basics of Anger – starts with the eye
- Closed-mouth Anger – More Intense and Less Intense
- Open-mouth Anger – Mouth open and open with clenched teeth

Assignment #5: Posing Anger. Due Class #6.

CLASS #6: THE CARDINAL EXPRESSIONS—DISGUST and JOY

August 12

Review of Assignment from Class #5: Posing Anger

DISGUST and JOY

- The basics of Disgust – the 3 active areas
- Posing Disgust – Inner Fibers and Middle Fibers
- The basics of Joy – eye/mouth agreement
- Posing the closed-mouth Smile – More Intense (Broad) and Less Intense (Slight)

Assignment #6: Posing Disgust and the Closed-mouth Smile. Due Class #7.

CLASS #7: THE CARDINAL EXPRESSIONS—JOY (Cont.)

August 17

Review of Assignment #6: Posing Disgust and the Closed-mouth Smile.

JOY

- The broad Smile – Open Mouth
- The Laugh
- Varieties of the Smile: Eager, Sly, Bittersweet
- The Fake Smile

Assignment #7: Posing varieties of the smile & laugh. Due Class #8

CLASS #8: FINAL REVIEW & OPTIONAL STUDENT WORK

August 19

Review of final Assignment #7: Smile & Laugh PLUS optional individual student submissions (below)

Today we have our final review of material covered, our final critique and course summary, **PLUS:**

OPTIONAL FOR EXTRA CREDIT – up to 50 points: Students may develop expression poses on other facial rigs that are part of the ARL library. Please consult with your TAs on software access and discuss with your Instructor what the specific criteria is for this assignment. Please submit your

materials to the TAs for class presentations no later than July 18. Submissions after that date will not be accepted or reviewed. Your Instructor will discuss your submission in class, explaining what works and what doesn't.

LEARNING OUTCOMES

1. Students learn the basics of how to pose various movements of the face in Maya using a pre-rigged model.
2. Students learn the individual components of facial expression and how to pose them on their own face and render them in Maya.
3. Students learn the criteria to create a resting "neutral" face with no apparent expression in Maya.
4. Students learn to pose convincing and accurate versions of the six cardinal facial expressions in Maya.
5. Students learn to pose certain expressions in varying degrees of intensity in Maya.

STUDENT ASSESSMENT

1. Student grade will be based on successful completion of weekly class Assignments.
2. Maximum points per class Assignment: 50 points.
3. Student may earn up to 50 extra points through successful submission of facial expressions on alternative ARL rigs (see explanation on Page 4)

GRADING RUBRIC for " Mastering Facial Expressions in CG"				
	Exemplary 50 points	Accomplished 40 points	Developing 30 points	Beginning 20 points
Weekly Assignments: Rendering of facial movements and expression	Assignment is complete and done extremely well. Required facial movement or expression is clear and accurate. Emotions are recognizable and non-ambiguous.	Assignment is complete. Requested facial movement or expression meets general criteria. Emotions are recognizable but not un-ambiguous.	Assignment is complete. Required facial movement or expression is just adequate. Emotions are barely recognizable and/or face contains unrealistic artifacts.	Assignment is incomplete. Required facial movement or expression does not meet general criteria. Emotions are not clearly recognizable.
Notes:				
1. Students are required to upload weekly class Assignments before midnight the day before each class to the designated web address. Any weekly class Assignment not uploaded by deadline receives 0 points.				
2. Students may choose to re-submit any completed Assignment on a one-time basis for review and higher grade. All re-dos must be re-submitted no later than July 18. No exceptions.				

STUDENT GRADES

Points	Grade	GPA		Points	Grade	GPA		Points	Grade	GPA
450	A+	4.0		300	B	3.0		150-90	C-	1.7
400	A	4.0		250-90	B-	2.7		110-40	D+	1.3
350-90	A-	3.7		210-40	C+	2.3		100	D	1.0
310-40	B+	3.3		200	C	2.0		50-90	D-	.7
0-40 Points = Grade E = Academic Failure. No credit earned										