

CSE 464 - FACIAL EXPRESSION CREATION FOR ANIMATION

2021 Summer Term A

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Tuesdays + Thursdays: June 22 to July 20, 2021 (4.5 weeks)

Time: 9:40am to 11:50am

Prerequisite: No prior Maya experience is required.

This 9-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. Each class includes a lecture on the principles of expression featuring Faigin demonstrating while drawing on his digital pad, followed by complementary digital demonstrations by the TA, an experienced animator using the software program Maya - standard in the animation industry.

Students are introduced to the individual muscles of expression, and shown how to combine those individual muscle movements to create the six cardinal 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 rendering the poses and expressions in CG. All student renderings are also reviewed in class, allowing students to correct their expressions, as necessary. Students spend time each week in the computer lab working under the supervision of the class TA who is an experienced alumnus from UW's own Capstone animation program.

OPTIONAL BONUS POINTS: For 40 points extra, students can pose a different character than our class pre-rigged model with several animated facial expressions. Project is due NO LATER THAN 5pm, Monday, July 19.

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. **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.**

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.

STUDENT RESOURCE FOR OPTIONAL ASSIGNMENT: www.onanimation.com

2021 COURSE SYLLABUS

CLASS #1: INTRO + MOVEMENTS OF THE UPPER FACE Tues. June 22

- Introduction to facial expression - Why it's important, how it's universal, and examples from art and photojournalism.
- Recent research on human expression and what it tells us.
- How facial muscles work; active areas of the face.

THE EYES & BROW

- Neutral eyes and eyebrows
- Position of the Lids: opening the upper eyelid; raising the lower lid; the squint
- Rotation of the eye
- Muscles of the Brow: eyebrow raiser

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

CLASS #2: MOVEMENTS OF THE UPPER FACE (Cont.) Thurs. June 24

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

THE UPPER FACE MUSCLES (Cont)

- The Scowl
- The Glare
- The Brow of Distress

Assignment #2: Posing the Muscle Movements around the Eye (Part #2). Due Class #3.

CLASS #3: MOVEMENTS OF THE MOUTH (Part 1) Tues. June 29

Review of Assignment from Class #2: Posing the Muscle Movements around the Eye (Part #2)

THE CLOSED MOUTH

- Sneering Muscle
- Smiling Muscle

Assignment #3: Posing the Movements of the Closed Mouth. Due Class #4.

CLASS #4: MOVEMENTS OF THE MOUTH (Part 2) Thurs. July 1

Review of Assignment from Class #3: Posing the Movements of the Closed Mouth

THE OPEN MOUTH

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

Assignment #4: Posing the Movements of the Open Mouth. Due Class #5.

CLASS #5: CARDINAL EXPRESSIONS—SURPRISE + FEAR Tues. July 6

Review of Assignment from Class #4: Posing the Movements of the Open Mouth.

SURPRISE and FEAR

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

Assignment #5: Posing Surprise and Fear. Due Class #6.

CLASS #6: CARDINAL EXPRESSION—SADNESS Thurs. July 8

Review of Assignment from Class #5: Posing Surprise and Fear

SADNESS

- The basics of Sadness – Crying vs. merely Sad
- Posing Crying
- Posing Sadness
- Various degrees of Sadness

Assignment #6: Posing Sadness. Due Class #7.

CLASS #7: CARDINAL EXPRESSIONS—ANGER + DISGUST Tues, July 13

Review of Assignment from Class #6: Posing Sadness

ANGER

- The basics of Anger – starts with the eye
- Closed-mouth Anger – various levels of intensity
- Open-mouth Anger – variety of mouth positions

DISGUST

- The basics of Disgust – the 3 active areas
- Posing Disgust – open mouth

Assignment #7: Posing Anger + Disgust. Due Class #8.

CLASS #8: CARDINAL EXPRESSION - JOY Thurs. July 15

Review of Assignment from Class #7: Posing Anger + Disgust

JOY

- The basics of Joy – eye/mouth agreement
- Posing the closed-mouth Smile
- Posing Joy with an open-mouth:
 - The broad Smile
 - The Laugh
 - Varieties of the Smile: sly, bittersweet, eager & fake

Assignment #8: Posing Joy - Closed- and Open-Mouth Smiles. Due Class #9.

BONUS ASSIGNMENT: Posing a different character from our class pre-rigged model with several facial expressions.

CLASS #9: FINAL REVIEW Tues. July 20

Review of final Assignment #8: Smile & Laugh, and any submissions of the “Bonus Assignment.”

Today we have our final review of material covered, our final critique and course summary.

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 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: 40 points.
3. **Perfect class attendance is worth 40 points, the equivalent of one assignment.**

GRADING RUBRIC for “ Mastering Facial Expressions in CG”				
	Exemplary 40 points	Accomplished 30 points	Developing 20 points	Beginning 10 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:				
<ol style="list-style-type: none"> 1. Students are required to upload weekly class Assignments before midnight the day before each class to the designated web address. 2. If an assignment is late there will be a 25% deduction from the assigned grade. 3. 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 20. No exceptions. 				

STUDENT GRADES										
Points	Grade	GPA		Points	Grade	GPA		Points	Grade	GPA
400	A+	4.0		290	B	3.0		235	C-	1.7
360	A	4.0		270	B-	2.7		225	D+	1.3
325	A-	3.7		255	C+	2.3		215	D	1.0
300	B+	3.3		245	C	2.0		<200	E/F	0