

Winter Quarter 2014 Syllabus

Course Title: Materials and Lighting

Course Number: CA3425

Course Description: In this course, students will address lighting 3D objects, lighting movement, and establishing congruence between background, object, reflectivity, and illusion of depth. The course will focus on the correlation between reality and computer rendition, stressing the disparity between real light and the technical facsimile of artificial lighting. The analysis, creation, and application of custom materials and texture maps will also be explored.

Pre-Requisite(s): CA3449 Intermediate 3-D Modeling

Co-Requisite(s): None.

Meeting Times and Location: Tuesdays and Thursdays, 2pm to 5pm (with appropriate breaks), Room 231 in LaSalle building

Instructor Name & Contact Information: Shannon Gilley
Phone: 612-332-3361 ext. 6919
Email: sgilley@aii.edu

If you are unable to reach me, you may call your Academic Director or Program Coordinator at 612-656-7600.

My mailbox is in room 341, in the cubby under my last name.

Office Hours: *Tuesdays and Thursdays, 10am to 11am, LaSalle 303*

Course Length: 11 Weeks

Instructional Contact Hours: 60 (20-lecture, 40-lab)

Quarter Credit Hour

All course work at Ai Minnesota is measured in quarter credits. One-quarter credit is awarded for each 10 classroom contact hours of lecture, 20 classroom contact hours of laboratory instruction, or 30 contact hours of internship. One classroom contact hour is defined as 50 minutes within a 60-minute period.

A quarter credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

- (1) One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for 10-12 weeks, or the equivalent amount of work over a different amount of time; or*
- (2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.*

Credit Value: 4 Quarter Credits

Course Competencies:	<p>Students will:</p> <ol style="list-style-type: none"> 1. Correlate real light with the computer rendition of light <ol style="list-style-type: none"> a. Manipulate digital light b. Adapt lighting to animation c. Explore the relationship between object, background, light, and movement d. Render realistic onscreen light properties e. Compare and control different light properties including ambient, spotlight, tracking, and movement f. Identify the correlation between camera angle, lens length, and the quality of the rendering system 2. Apply principles of lighting in computer animation 3. Apply the principles of rendering in computer animation 4. Apply traditional paint concepts, tools, and techniques for use in computer animation 5. Apply texture mapping strategies <ol style="list-style-type: none"> a. Create texture maps b. Apply texture mapping
Required Materials:	Digital Tutors account (subscription available free to current Ai students; contact Steve Liska in the library for details)
Recommended Materials:	There are a number of book and online materials that your instructor can recommend based on your interests. Be sure to check out what Digital Tutors has to offer for software-specific skill-building. Also don't underestimate the importance of looking at craft in photography and painting!
Technology Needed:	Computer, Maya 2012
Instructional Methods & Resources:	This course will challenge you to develop professionally-relevant knowledge and skills. Course information will be presented in many forms, including lecture, class discussion, demonstration, case studies, simulations, field projects, and studio or lab projects. Students will use library and community resources, including research and reference materials, gallery exhibitions, industry events, and guest speakers. Materials can be obtained from other libraries using the interlibrary loan program.
Estimated Homework Hours:	At least 8 hours per week. There is no way to anticipate how many hours it takes to come up with a great idea, so get your work done early. Procrastination will not help you! Homework will primarily consist of projects that focus on implementing professional-level texturing, shading, and lighting in a variety of scenes.

STUDENT EVALUATION AND GRADING

Successful professionals require a supportive environment. In-class discussions and/or critiques of other students' work and ideas is a chance to help each other grow as conceptual and critical thinkers.

Student	Course Activities	Points Distribution	GRADING SCALE
---------	-------------------	---------------------	---------------

Evaluation:	Linear workflow and Final Gather	5%	A	100 – 93%
	Three plastics	5%	A-	92 – 90%
	Hard-surface WIP crit	10%	B+	89 – 87%
	Leather book	5%	B	86 – 83%
	LED screen	5%	B-	82 – 80%
	Hard-Surface final	25%	C+	79 – 77%
	UV map turntable	5%	C	76 – 73%
	Skin shader	5%	C-	72 – 70%
	Organic WIP crit	10%	D+	69 – 67%
	Organic final	25%	D	66 – 60%
	TOTAL	100%	F	Below 60%

The academic programs at Art Institutes International-Minnesota are designed to prepare you for your future career. Your future will be wrought with deadlines and time clocks, so this class will require real world punctuality. If you are absent or late for class, you will not be able to make up points associated with in-class activities, including quizzes, tests, presentations, and critiques. Tardy students are responsible for making their presence known to the instructor at an appropriate time. (See the Attendance Policy below for more information.)

Homework and other preparatory work must be done before class meets and is due immediately at the beginning of class, unless the instructor publishes other requirements.

A WORD ON DEADLINES

Late work is not acceptable.

In the business world, deadlines are rarely pushed back. Work submitted after deadline will earn 0 points. Your instructor may make an exception in cases of severe personal illness or death in the family. Technology, transportation, relationship, and childcare problems are not the basis for an exception.]

You, the student, are expected to come to class prepared to discuss the assigned reading material. These activities are designed to motivate and reward you for reading and understanding the concepts and terms. In class, we will build on your knowledge gained through the reading with discussions and activity. Class discussion and your individual learning are improved when the reading is completed before the required class.

Because group effort may be required, attendance is mandatory. Excused absences may be permitted, but students are expected to let the instructor know in advance. If you miss a particular class, it is also your responsibility to contact a peer (or peers) to get notes and any assigned work.

You may be evaluated individually and as a member of a team on a variety of learning experiences. Different testing methods afford you diverse opportunities to demonstrate your skills and knowledge, including field assignments, tests, presentations, papers, projects, quizzes and more. Final grades will be determined by scores on your individual assignments, assessments, and classroom participation. Your final grade may also be influenced by group-based activities, including peer evaluations.

If you disagree with a grade in this course, you may take these steps:

- Step 1. Make an appointment with me to discuss your situation. Bring your graded work, the assignment sheet and this syllabus to the meeting. If you feel the issue is not fully addressed, proceed to
- Step 2. Submit a written appeal to me, explaining why you believe your grade is wrong. You should justify your opinion with information from the assignment sheet and/or syllabus. If you feel the issue is not fully addressed, proceed to
- Step 3. Make an appointment to discuss your concerns with your Department Director or Program Coordinator. If you feel the issue is not fully addressed, proceed to
- Step 4. Submit a written account to the Dean of Academic Affairs. The written account should indicate your name, phone number, and ID#, and discuss the steps you have taken to remedy the situation. The Dean will refer your appeal to the Appeals Committee. Be prepared to produce your graded work, the assignment sheet and this syllabus.

ACADEMIC POLICIES

Disability Services

The Art Institutes International Minnesota provides accommodations to qualified students with disabilities. The Disability Services office assists qualified students with disabilities in acquiring reasonable and appropriate accommodations and in supporting equal access to services, programs and activities at the Art Institutes International Minnesota.

Students who seek reasonable accommodations should contact Pam Boersig, Dean of Student Affairs, in Pence 209, 612-656-6865 or pboersig@aii.edu, and notify her of their specific limitations and, if known, their specific accommodations. Students may be asked to supply medical documentation of the need for accommodation.

Classroom accommodations are not retroactive, but are effective only upon the student sharing approved accommodations with the instructor. Therefore, students are encouraged to request accommodations as early as feasible with the Dean of Student Affairs to allow for time to gather necessary documentation.

If you have a concern or complaint in this regard, please contact Pam Boersig, Dean of Student Affairs, in Pence 209, 612-656-6865. Complaints will be handled in accordance with the school's Internal Grievance Procedure for Complaints of Discrimination and Harassment.

Equal Education Opportunity Policy

The Art Institutes International Minnesota does not discriminate on the basis of race, color, national origin, sex, gender, sexual orientation, disability, age, religion, genetic marker, or any other characteristic protected by state, local or federal law, in our programs and activities.

Student Assistance Program

The college provides confidential short-term counseling, crisis intervention, and community referral services through the Talk One2One Student Assistance Program (SAP) for a wide range of concerns, including relationship issues, anxiety, family problems, loneliness, depression, and substance abuse. Services are free, confidential, and available 24 hours a day, 7 days a week at 888-617-3362.

The Student Affairs office also offers programs on mental health-related topics each quarter. If you have any questions regarding counseling services, please contact Pam Boersig, Dean of Student Affairs, in Pence 209, 612-656-6865.

Attendance

Regular, on-time attendance is both courteous and professional. The Art Institutes International Minnesota expects students to demonstrate professionalism by attending all classes as scheduled, arriving on time, and remaining for the full duration of the class. Outside employment should not be scheduled during class hours.

Students should be aware that even if there is no “attendance” grade per se for a class, it is difficult to succeed in class without regular, on-time attendance. Individual faculty may determine the impact, if any, of absences on grades. The Art Institutes International Minnesota supports the attendance policy for each class as it is described in the syllabus. The full AiM attendance policy is found in the Student Handbook, which can be accessed through the Student Portal.

Academic Dishonesty

At the Art Institutes International Minnesota, plagiarism is a cumulative offense; each act of plagiarism is documented in the student’s academic record until degree completion. Violations of this policy will be handled in accordance with the disciplinary procedures outlines in the Student Code of Conduct Policy.

Examples of plagiarism include paraphrasing an original document or piece(s) of an original document and not citing the original author’s name and publishing year, using direct quotes from an original document and not citing the original author’s name and year, and using written documents, still or moving images, original ideas, research information, audio samples and music clips, and failing to cite the original author’s name and publishing year.

Cheating is the action to deceive or alter the perception regarding the author or originator of student work and is a violation of the Student Code of Conduct. Cheating includes the duplication of written or electronic assignments, exams or documents either in whole or in part and submitted as an original piece of work; the exchange of answers with others either giving answers or receiving answers during an in-class assignment, test or exam, or take-home assignment or exam.

Typical disciplinary sanctions for a first offense of plagiarism or cheating includes automatic failure of the assignment/exam with no opportunity to re-do or make up the plagiarized/cheating work. Sanctions for the second offense include automatic failure of the course. Subsequent incidents will result in dismissal from the school.

CLASSROOM COURTESIES AND PROFESSIONAL EXPECTATIONS

Collaboration and Communication

The learning environment should provide a business-like approach to getting the job done, so any behavior that would be deemed as inappropriate for the typical work environment will put the student at risk. Examples include disrespectful language, passive-aggressive behavior, lack of commitment to personal or team success, and any other behaviors that disrupt the learning environment for other students. Additionally each team member is responsible for the academic integrity of the group.

YOU MUST USE YOUR COLLEGE EMAIL ACCOUNT, or forward your college email to another personal account. You must be able to accept and respond to email on a daily basis. You are responsible to know college policies and procedures as communicated through the college email.

Academic Resources

YOU ARE ACCOUNTABLE FOR REQUIRED ACADEMIC SKILLS. Successful students possess course-appropriate reading comprehension, critical thinking, research, writing, presentation, and communication skills. If you or your instructor determine that you have a need for additional resources beyond those offered in class, there are several options available to you.

The Academic Achievement Center is located in LaSalle room 105. The Academic Achievement Center houses peer tutors and faculty tutors in program areas and general education, and offers skills workshops as well as facilities for study groups.

If you have any questions regarding the AAC, tutoring, study groups or skill workshops, please contact Tim Storsved, Director, Academic Achievement Services, at tstorsved@aii.edu, or stop by his office in the Pence building, room P219.

The Interior Design Skills Center (a.k.a. “Interior Design Studio”) houses Interior Design peer tutors and faculty tutors. The Skills Center is located in room 423, on the 4th floor of the LaSalle building.

Peer tutors assist students with subject/content area academic support, as well as, study skills and organizational tips. Peer tutors are current AIM students in good academic standing (a CGPA of 3.5) with a desire to assist others in their academic progress. All peer tutors receive mandatory tutor training.

Students (tutees) who seek academic support may visit each of the centers to receive tutoring assistance in a wide variety of subject areas. Each tutor schedule (located outside of the center door) identifies the tutor and their specific areas of expertise.

Academic Advising is offered in two formats: The **New Student Academic Advisor**, Julie Ogren, is located in room 341 in the LaSalle building—she is there for new students and first-quarter students. Julie’s contact information is:

(612) 656-7677

jogren@aii.edu

Academic Advisors at the Advising Center – to be contacted through email or by phone – are available for continuing students and to support your successful completion of this course:

Stephen Burns, Academic Advisor

Toll Free: 1-855-861-2151

sburns@aii.edu

You are also responsible for executing tutorial recommendations made by your instructors. Remember, your instructors and Academic staff are here to help you find the resources you need.

The Library is located on the second floor of the LaSalle building. The library is open seven days a week for a total of 79 hours per week. The collection is comprised of books, newspapers, journals and magazines, videos, DVDs, and CDs that support the school’s curricula. The collection currently numbers over 27,000 volumes with an additional 169 periodical subscriptions. Materials also include royalty-free music/sound effect CDs, art history and interior design slides, and an

ever growing eBook collection. Textbooks and reserve materials are available for in-house use only. Many academic and industry databases are also available, including EBSCO, StyleSight, Digital Tutors, Hoover Academic, ReferenceUSA, FirstCom and Women's Wear Daily.

Student Life

The Student Affairs Office is located in room 209 in the Pence building. There you can find information, services and program that can help you to extend and integrate academic content and life experiences.

Community Resources

This course will engage community resources, including local libraries, galleries, exhibitions, guest speakers and industry tours. Your active participation is important and expected.

OTHER ITEMS TO NOTE:

Monday, January 20, 2014 – Martin Luther King Day

Friday, February 21, 2014 – President's Day

Otherwise the school is open and classes run – this includes weekends.

You are responsible for saving all returned work.

The course is designed to create a safe, accepting, creative and challenging environment in which students can learn. The course policies are designed to support the best features of the learning-centered classroom. Wherever possible, we will adapt to a student's own style and pace for learning.

Since the learning environment should facilitate intellectual exploration and personal discovery, most activities will be problem-based. Course activities and projects are designed to place the primary responsibility for creating and/or applying knowledge on the shoulders of students.

Students share responsibility in the learning process. To succeed in this class and fully utilize the learning experience, students must be actively involved. This includes following classroom policies such as participating in class discussions, completing assigned reading, demonstrating strong creative design and writings skills, contribution to the team etc. Grades and student learning will suffer when a student is not actively involved.

Late Assignments

Due dates are listed in the weekly outline. Projects are due five minutes after the start of class unless otherwise specified. If you are unpredictably absent on the day a project is due, use the eCompanion Dropbox for the course (if available) or e-mail the required assets to your instructor *before the time it is due*. **Late projects will not be accepted**, with the exception of the "Stuff Happens" card, with the regulations listed below:

- The card entitles you to turn your project in **no more than one class after the due date and time** for that project.
- You may use the card **only once** during the course.
- The card cannot be used for the final project.
- You must declare your use of the card by e-mailing your instructor at sgilley@aii.edu indicating which project

you are using the card for. This e-mail must be sent **no later than the due date of the project**.

- You may also choose to use the card to drop one lab exercise or similar item from your course grade so long as it is worth no more than 5% of the course grade.
- You will receive no additional credit if the card is not used during the course.
- You may not exchange the card with another student.
- You may not carry the card over to another course.

Resubmitting Assignments

There are no provisions for resubmitting assignments for the purposes of a revised grade.

Make-up Policy

In-class lab exercises and quizzes cannot be made up. If you arrive late on a quiz or project day, you will not be given a time extension nor will content be repeated.

Technical Difficulties

Any technology-related difficulties, including lost data, will not be considered when assessing projects. Save incrementally and often. You are responsible for backing up your own work on a regular basis (preferably in multiple locations, including cloud-based storage).

Classroom Environment

Disruptions to the learning environment will not be tolerated. When the instructor is talking, students are paying attention (this includes not working on projects while the instructor is addressing the class). Cell phones will be turned off or silent. If an emergency call must be taken, the student must do so outside the classroom. Social networking is not allowed during class unless specified by the instructor. Students not following any part of this policy may be removed from the class. Repeated disruptions may result in the student being removed from the class for the remainder of the quarter.

Note-taking

In some situations, a student may be assigned the task of note-taker for a particular lecture or exercise. These notes are to be taken via a Word doc, transcribed to a Word doc, or scanned to a JPEG or PDF file, and made available on the course folder (usually on the Shared drive under *Gilley\course name*) no later than the start of the next class.

Timing Out of Class

Students are expected to show up to each class, on time, and ready to work. Students who miss four consecutive classes will be timed out and will not be let back in to the class. Exceptions *may* be made for family/medical emergencies but the student must contact the instructor before he/she misses four consecutive classes (this will be reviewed on a case-by-case basis and is not guaranteed). If an absence is excused, a success plan must be drawn up between the student and the instructor.

Recommended Actions for Success

1. While at discrete moments during the course your work is assessed (like when you turn in a project), remember YOU are being evaluated at all times. This process is often informal and passive in day-to-day interactions in and out of class as people form impressions of you. Treat the classroom like your first industry job. Everyone has off days, but set a goal of being present, respectful, positive, professional, invested, hard-working, and fun (when the situation calls for it). Contribute (i.e. don't just take, but also give – help the person next to you during work time, announce an upcoming industry event you heard about, etc.). Your instructor and your peers are your first ring of network contacts – convince them that you are worth recommending to others; this will “make your stock go up,” expand your network, and ultimately give you a better chance at getting the job you want. On the other side of the coin, a bad reputation can spread quickly, which will often impede your success – even if you demonstrate talent. Remember the three P's: Positive, Passionate, Professional.
2. Be detail-oriented with your work. Sloppiness and mistakes will sink you quickly.
3. You have to talk like an animator (or visual effects artist, motion designer, etc.) if you're going to be one, so learn the language. You'll tank at the job interview if you can't speak intelligently about your work and process. Know the proper terminology for your day-to-day activities and understand how your work fits into a broader production pipeline.
4. Arguably the most important skill in 3D work is problem-solving. In order to survive in this industry, you have to detect when something is not working right, determine the cause, and find a solution. The instructor is here to help, but you need to be self-directed in troubleshooting. Run through the following when you encounter a problem:
 - a. How can I describe the problem using industry-standard language?
 - b. What was I doing when I first noticed the problem? Does undoing that action also undo the problem?
 - c. What do I think are the most likely causes for this problem? (This is one of the tougher questions to answer. Check your course notes. Google a short phrase that describes the problem using proper terms in your search. Navigate the help docs. Ask classmates if they have ideas.)
 - d. Once you find the answer, add it to your notes so you can refer back to it later. The next time you get stuck on the same problem, you'll know how to get around it more quickly.
5. Find ways to work efficiently. You will accomplish your tasks with greater quality in less time. If you are getting paid a lump sum to do a job, you will in effect increase your hourly rate by spending less time doing the work. If you are getting paid hourly, you will be able to exceed your client's expectations, increasing the chances that your client will offer you more opportunities later on – and you will have more free time to take on additional projects or some well-earned rest and relaxation.
6. Decide what job or type of job you want in the industry, and what companies you would like to work for. Research those companies. Study their work, and make *your* work look like *their* work – this will help you to look like an attractive candidate. Reach out to local artists that interest you and offer to buy them a cup of coffee in exchange for an informational interview.
7. Dream about your ideal projects, but don't undervalue the bread-and-butter work. Individuals and companies must pay the bills, and sometimes that means doing work that isn't overly creative, exciting, or fun. Find some way to improve with every project. Even if the overall idea of a particular project doesn't jazz you, there should be some way you can grow that is useful to your career goal. Identify it and run with it. Keep in mind, on the job, you will usually be doing work handed to you by others, and you won't always enjoy the work.
8. Learn how to break your tasks down into pieces, create a production schedule (consider using a Gantt chart on

larger projects), manage your time, and meet deadlines. It will lead to greater success and less stress.

9. Check your school e-mail daily (or forward it to an account that you do check daily). If I need to give or get important information outside of class, I will e-mail you at your school account.
10. Assemble your work into a demo reel and online portfolio ASAP! You never know when a job opportunity will come along, and you need to be ready at a moment's notice to compete against other artists for the spot. The reel and portfolio are living documents, constantly being updated as you produce new and better work – take out the weakest from the herd, replace it with your latest and greatest, and share your accomplishments with your personal and professional networks.
11. Start networking yesterday! A good portfolio is often not enough to get hired for the job you want. Many jobs in this industry are filled by word-of-mouth (which relates back to item #1 above!). Here are some ways to get involved:
 - a. Join email lists/Facebook groups/etc. for industry-related groups, such as the Minnesota Maya User Group, the After Effects User Group, IGDA, MSP-SIGGRAPH, etc., and attend their meetings. You may see something cool and meet some new people, and afterward you might be able to relocate to a local watering hole where people can get to know you in an informal setting (employers want to know that there is a “personality fit” between their company and a potential employee, and this is a great place to answer that question in a positive way).
 - b. Attend industry-related events such as the Minnesota Electronic Theater. Even better, enter your work!
 - c. Post your work on industry forums so people can see it and give you feedback (some people have gotten job offers just from others viewing their posted work).
 - d. Attend software training sessions (some are free).
 - e. Don't forget those informational interviews mentioned above.
 - f. Don't network exclusively through the Internet. There is nothing like face-to-face interactions.
 - g. Career Services is not tasked with doing your job search for you – they are there to assist, but you still carry the primary responsibility for finding work. *You are the captain of your own ship*, as they say. Don't wait until you need an internship to start networking – those who start getting involved in the professional community earlier in school have a much easier time meeting their goals.

Some Final Notes

The most common issue I see in class is students not paying undivided attention to class presentations, whether they are lectures, critiques, or other activities. The process of learning tools and techniques essential to your success in the industry, and the deep assessment of peer work, require your full cognitive abilities to be maximally effective. And, just as important, it is the respectful thing to do in the presence of your instructors and peers.

Weekly Course Schedule

This schedule is subject to change!

Revised: 12/17/13

Items in **red** are worth points; see “Student Grading and Evaluation” above for details.

<i>Class Session</i>	<i>Topic</i>	<i>Homework (due at beginning of class)</i>	<i>Related Competencies</i>	<i>In-class Activities</i>
----------------------	--------------	---	-----------------------------	----------------------------

Week 1 Session A	<ul style="list-style-type: none"> • Course overview • Describing light/surface interaction (real world and CG) 	<p>[Est. time needed: None] No homework due on first class</p>	1	<ul style="list-style-type: none"> • Lecture: Translating visual properties of real-world surfaces into shader language • Lecture: Review Hypershade and common shading models
Week 1 Session B	<ul style="list-style-type: none"> • Product photography (studio lighting) and architectural photography (available light) • Quick-start guide to linear color workflow and final gather • Implementing CG lighting setups 	<p>[Est. time needed: 1 hour]</p> <ul style="list-style-type: none"> • Bring to class: your completed hard-surface project from Intermediate 3D Modeling, and three professional photos of your object/space (or similar) • Written light/surface analysis of three surfaces from your hard-surface project 	1	<ul style="list-style-type: none"> • View samples of product/architectural photography • Lecture: “Lighting in 3-Part Harmony” • Lecture: CG lighting choices
Week 2 Session A	<ul style="list-style-type: none"> • Fundamentals of linear color workflow and final gather • Intro to global illumination • Review CG lighting setups 	<p>[Est. time needed: 2 hours]</p> <ul style="list-style-type: none"> • Linear workflow and final gather are implemented properly • Neutral-shader lighting setup is 50% complete 	1, 2, 3	<ul style="list-style-type: none"> • Interactive demo: Linear color workflow and final gather • Critique lighting setups • Work time
Week 2 Session B	<ul style="list-style-type: none"> • Intro to mia_material • Three types of reflection (DGS) 	<p>[Est. time needed: 2 hours]</p> <ul style="list-style-type: none"> • Global illumination implemented properly (if applicable) • Neutral-shader CG lighting setup is 100% complete 	1, 2, 3	<ul style="list-style-type: none"> • Interactive demo: Three plastics • Work time
Week 3 Session A	<ul style="list-style-type: none"> • Critique base materials and review mia_material • Determining texture requirements (none, 2D file-based, 2D procedural, 3D procedural) 	<p>[Est. time needed: 2 hours]</p> <ul style="list-style-type: none"> • 50% of project surfaces have base materials with tuned DGS and transparency properties 	All	<ul style="list-style-type: none"> • Critique base materials • Discussion: Analyze hard-surface texture requirements • Work time
Week 3 Session B	<ul style="list-style-type: none"> • Rendering and tone-mapping 	<p>[Est. time needed: 2 hours]</p> <ul style="list-style-type: none"> • 100% of project surfaces have base materials with tuned DGS and transparency properties 	All	<ul style="list-style-type: none"> • Interactive demo: Rendering and tone-mapping • Work time to adjust lights and shaders
Week 4 Session A	<ul style="list-style-type: none"> • Six goals of UV mapping • UV mapping learning resources • WIP crit 	<p>[Est. time needed: 2 hours]</p> <ul style="list-style-type: none"> • Refined lighting scheme is implemented • Tone-mapped 1280x720 TIFF image ready to turn in to Dropoff drive 	All	<ul style="list-style-type: none"> • Lecture • WIP crit • Research: UV mapping • Work time
Week 4 Session B	<ul style="list-style-type: none"> • Critique UV unwrap • Texture shopping • Building shading networks 	<p>[Est. time needed: 2 hours]</p> <ul style="list-style-type: none"> • 50% of necessary surfaces are unwrapped 	4, 5	<ul style="list-style-type: none"> • Critique UV unwrap • Lecture • Interactive demo: leather book

Week 5 Session A	<ul style="list-style-type: none"> • Rendering in passes (AO, indirect, diffuse, specular, reflection, shadow) • Creating texture maps • Building shading networks 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • 100% of necessary surfaces are unwrapped • One-third of texture mapping complete 	4, 5	<ul style="list-style-type: none"> • Interactive demo • Informal small-group meetings • Work time
Week 5 Session B	<ul style="list-style-type: none"> • Layered textures • Self-illuminated displays 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • Two-thirds of texture mapping complete • Lighting is refined as needed 	All	<ul style="list-style-type: none"> • Lecture • Interactive demo: LED screen • Work time
Week 6 Session A	<ul style="list-style-type: none"> • Review rendering/texture-mapping workflow • Review submission guidelines 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • All texture mapping complete • Lighting is refined as needed 	All	<ul style="list-style-type: none"> • Lecture • Informal small-group meetings • Work time
Week 6 Session B	<ul style="list-style-type: none"> • Critique final hard-surface projects 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • Final hard-surface project due (pay close attention to submission guidelines) 	All	<ul style="list-style-type: none"> • Critique final hard-surface project
Week 7 Session A	<ul style="list-style-type: none"> • UV mapping organic objects 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • Bring to class: your final organic project from Intermediate 3D Modeling and color/texture references 	5	<ul style="list-style-type: none"> • Interactive lecture/demo • Work time
Week 7 Session B	<ul style="list-style-type: none"> • Additional UV mapping techniques • UV mapping and turntable render 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • 50% of organic surfaces are unwrapped 	4, 5	<ul style="list-style-type: none"> • Lecture • Research • Critique • Work time
Week 8 Session A	<ul style="list-style-type: none"> • Critique UV map turntable renders • Introduction to 3D paint techniques (Mudbox) • Discussion of multi-channel painting for skin 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • 100% of organic surfaces are unwrapped • UV map turntable due 	4, 5	<ul style="list-style-type: none"> • Critique UV map turntable renders • Lecture • Research • Work time
Week 8 Session B	<ul style="list-style-type: none"> • 3D paint troubleshooting 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • One-third of surfaces are painted 	4, 5	<ul style="list-style-type: none"> • Research • Work time
Week 9 Session A	<ul style="list-style-type: none"> • Critique work-in-progress • Practice exporting maps • Rendering skin 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • Two-thirds of surfaces are painted • WIP textures are applied to model in Maya 	All	<ul style="list-style-type: none"> • Lecture • Interactive demo: Skin shader • Work time
Week 9 Session B	<ul style="list-style-type: none"> • Wrap up first phase of texture painting 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • All surfaces are painted and exported to Maya model 	All	<ul style="list-style-type: none"> • Informal WIP crit • Work time

		<ul style="list-style-type: none"> • Skin shaders are 50% implemented (if applicable) 		
Week 10 Session A	<ul style="list-style-type: none"> • Portrait lighting review • Animated camera review • Ambient occlusion review 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • Shading networks are 100% implemented 	All	<ul style="list-style-type: none"> • WIP crit • Work time
Week 10 Session B	<ul style="list-style-type: none"> • Batch rendering • Using the render farm? • Review submission guidelines 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • Lighting is 100% implemented 	All	<ul style="list-style-type: none"> • Lecture • Work time
Week 11 Session A	<ul style="list-style-type: none"> • Last-chance fixes 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • Shading networks are lighting are 100% refined 	All	<ul style="list-style-type: none"> • Informal small-group meetings • Work time
Week 11 Session B	<ul style="list-style-type: none"> • Critique final organic projects 	[Est. time needed: 2 hours] <ul style="list-style-type: none"> • Final organic project due (pay close attention to submission guidelines) 	All	<ul style="list-style-type: none"> • Critique final organic project