

**Fall Quarter 2011 Syllabus**

**Course Title:** Maps Mattes and Masks

**Course Number:** VE2450

**Course Description:** This course continues the development of digital imaging skills, with an emphasis on advanced techniques in masking, maps, channels, and compositing.

**Pre-Requisite(s):** CA3438 Computer Graphics

**Co-Requisite(s):** None

**Meeting Times and Location:** Tuesdays and Thursdays, 2pm – 5pm, LaSalle Room 230

**Instructor Name & Contact Information:** Michael Heagle  
Phone: (763) 647-9277  
Email: mheagle@aii.edu

If you are unable to reach me, you may call your Academic Director at 612-656-6954. My mailbox is in room 341, in the cubby under my last name.

**Office Hours:** Mondays 11am-2pm or by appointment in LaSalle Room 230. Appointments can be made in person or via any of the contact methods listed above.

**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

<b>Course Competencies:</b>	<p>Students will:</p> <ul style="list-style-type: none"><li>• Explain utilization of layers and channels in digital imaging</li><li>• Create conceptual digital illustrations</li><li>• Create digital matte paintings</li><li>• Demonstrate advanced compositing and masking skills in given projects</li><li>• Create complex textures and patterns</li><li>• Define types of maps as they relate to imaging and animation</li><li>• Differentiate file management, color modes and output</li><li>• Employ special effects in typography and imaging</li><li>• Describe inter-relativity of several software programs</li><li>• Articulate how imaging applies to the World Wide Web</li></ul>
<b>Required Materials:</b>	<b>Recommended: The Invisible Art</b> , Mark Cotta Vaz and Craig Barron <b>The Digital Matte Painting Handbook</b> ,
<b>Technology Needed:</b>	Computer, printer, Internet access, AIM email account. Portable storage device capable of storing at least 4 GB of data. Adobe Photoshop, access to Wacom tablet or similar entry device, 3D and compositing platforms of choice
<b>Instructional Methods &amp; Resources:</b>	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.
<b>Estimated Homework Hours:</b>	4-6 hours per week

**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.

<b>Student Evaluation:</b>	<b>Course Activities</b>	<b>Points Available</b>
	Concept Slam (15) Value Painting (10) Day for Night (20) Perspective Match Photo (10) Color Match Photo (10) Traditional Matte Painting 1 (20) 2D Matte Painting Concepts (15) 2D Matte Painting (30) 2.5D Matte Painting (10) 3D Match Photo (10) 3D Projection Map Matte Painting (30)	<b>Total 180 Points</b>

<b>Points Distribution</b>	<b>GRADING SCALE</b>	
<b>Preproduction/Fundamentals (70 Points) 39%</b>	<b>A</b>	<b>100 – 93%</b>
<b>Production Painting (110 points) 61%</b>	<b>A-</b>	<b>92 – 90%</b>
	<b>B+</b>	<b>89 – 87%</b>
	<b>B</b>	<b>86 – 83%</b>
	<b>B-</b>	<b>82 – 80%</b>
	<b>C+</b>	<b>79 – 77%</b>
	<b>C</b>	<b>76 – 73%</b>
	<b>C-</b>	<b>72 – 70%</b>
	<b>D+</b>	<b>69 – 67%</b>
	<b>D</b>	<b>66 – 60%</b>
	<b>F</b>	<b>Below 60%</b>

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.

Because group effort may be required, attendance is mandatory. Unexcused absences will result in a lower grade. 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.

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 Academic Director. 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 may convene an appeals committee. Be prepared to produce your graded work, the assignment sheet and this syllabus.

## ACADEMIC POLICIES

**Discrimination Policy** It is AI Minnesota policy not to discriminate against qualified students with documented disabilities in its educational programs, activities, or services. If you have a disability-related need for adjustments or other accommodations in this class, please contact Valerie Johnson, 612-656-6866 [vsjohnson@aii.edu](mailto:vsjohnson@aii.edu), or visit Pam in Pence room 209. Any accommodations will be authorized by Valerie or her designee—no exceptions.

**Student Assistance Program** The college provides confidential short-term counseling, crisis intervention, and community referral services through the AllOne Health Student Assistance Program (SAP) for a wide range of concerns, including relationship issues, family problems, loneliness, depression, and alcohol or drug abuse. Services are available 24 hours a day, 7 days a week, at 1.888-617-3362. The Student Affairs office also offers programs on mental health-related topics each quarter. If you have any questions regarding counseling services, please contact the Office of Student Affairs.

**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.

**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. [From the 2010/2011 AiM Student Handbook section on Academic Integrity, beginning on pages 31-32.]

## 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 SCHOOL EMAIL ACCOUNT**, or forward your school email to another personal account. You must be able to accept and respond to email on a daily basis.

**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 room 320 (across from the Academic Advising office). The Academic Achievement Center houses peer tutors in program areas and general education.
- **The Interior Design Skills Center** houses Interior Design peer tutors and general education. The Skills Center is located in room 011, in the basement 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. Some Peer tutors also serve as Teaching Assistants, where their role is to work alongside an instructor during lab/group hours of a class.

- **Academic Advising** is located in room 316 in the LaSalle building. Academic Advisors are available to assist you in identifying areas or patterns of academic weaknesses, and to put into place any support resources a student may need.

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 in the LaSalle building. The library is open 79 hours per week and is currently processing an average of 5,000 circulation transactions per month. The collection is comprised of books, newspapers, journals and magazines, videos, DVDs, and CDs that support the curricula. The collection currently numbers over 23,000 volumes with and an additional 189 periodical subscriptions. Materials also include royalty-free music/sound effect CDs, art history and interior design slides, and copies of computer software manuals utilized within the College. Textbooks and reserve materials are available for in-house use, and many academic and industry databases are available, including WilsonWeb, Proquest, AccuNet / AP, Gettyimages, Electronic Library for Minnesota, Grove Art Online, Hoover's Online and Oxford Reference Online.

**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.

**Visual Effects Program-Specific Philosophy and Guidelines**

The goal of the Visual Effects and Motion Graphics program is to prepare students for a career in video or film post-production, including film style compositing and broadcast-style motion graphics. This will be accomplished through demonstration of software, procedures and techniques utilized in the field, practicing professional behavior through teamwork, a positive attitude, and managing deadlines. The following rules are in place to help all students to become contributing members of this exciting field.

The instructor reserves the right to adapt the syllabus and lesson plan to accommodate student learning needs, including but not limited to creating additional or remedial lessons or projects, or moving dates to accommodate holidays.

The day-by-day timeline of this class has been designed to carefully utilize all contact hours. Arriving late for class makes this difficult or impossible. There is no formal grade for attendance, as those students who miss class time dig their own graves while assignments and in-class exercises flutter away. Be smart and get what you pay for by coming to each class session.

Most assignments build off of previous exercises. Because of this, missing an assignment makes it difficult or impossible to continue onto the next stage. All assignments must be turned in to the instructor on the due date to be considered for full credit. Work not turned in on the due date may be docked up to one grade less per day until it is received. Holes in the gradebook inevitably result in grades dropping or failure of the class, it is your responsibility to familiarize yourself with the expectations of the course and attend to the projects in a timely fashion.

Ours is an iterative industry, and work is never done, it is merely taken away. With that in mind, students are encouraged to rework projects until the final day of the quarter, resubmitting for a potential grade improvement if the work merits it. Additionally, students who successfully go above and beyond the expectations of an individual project are entitled to extra points at the instructor's discretion. This is dependent on the initial criteria of the project being met fully.

Project accommodations may be made if a student has decided on a specific area of industry specialization, but only if all the existing requirements of the project are met. The basic purpose of the exercise is non-negotiable: for example, a rotoscoping shot is a rotoscoping shot and must be completed to pass the course. What you do with the rotoscoped footage is negotiable.

Food and drink policy as per Ai standard policy, depending on classroom/laboratory location. Please prevent cell phones from audibly ringing during shared class activities.

## Weekly Course Schedule

This schedule is subject to change!

### Week One: Concepting

- The Invisible World of Matte Painting
- Concept Art vs Fantasy Art
- Using the Wacom Tablet
- Sketching in Photoshop
- Aspect Ratio
- 2K Resolution
- Research: Methods and Resources
- Entering The Zone! Creative Exercises
- **Concept Slam: 5x 10 minute sketching**

#### Concept Slam Exercise (15)

Objectives: Get away from hyper analyzing and get into “The Zone.” Produce five concepts in ten minutes each. Work on broad strokes of composition and color, thinking more like a storyboard panel than a “painting.”

#### Graded on: 3 points each x 5 paintings

1 point: Composition

1 point: Color or Value

1 point: Worked Loose

**Week Two: Relighting**

- Light and Shadow basics
- **Value Painting Exercise**
- Cinematic lighting
- Painting a Cloudscape
- Photoshop/Extended toolset
- Keying
- **Day for Night**

**Value Painting Exercise (10)**

Objectives: Consider how light interacts in the room as we replicate it using tones and values in Photoshop. Train your eye, and use digital tools to make the process easier.

**Graded on:**

5 points: Capturing the tonal values of the room through observation

5 points: Use of tools such as gradients, fills, and the tablet

**Day for Night Project (20)**

Objectives: Convert a high resolution photo from day into night. Apply keying, masking, and relighting techniques in the service of a “cinematic” shot. Practice simple photocompositing techniques.

**Graded on:**

5 points: Cinematic aspect ratio and composition

5 points: Broad dynamic range represented

5 points: Traced light and shadow throughout the shot realistically

5 points: Sky replacement

**Week Two Part Two: Photocompositing**

- Perspective 101
- Linear Perspective (1, 2, and 3 point)
- Atmospheric Perspective
- Color Perspective
- **Perspective Match a Photo Element**
- Color 101
- **Color Match a Photo Element**

**Perspective Match Photo Exercise (10)**

Objectives: Learn and apply the principles of one, two, and three point perspective using tools in Photoshop. Accurately insert new architectural elements into a photo.

**Graded on:**

5 points: Use of grid, followed existing perspective lines in the shot

5 points: Repaired inaccuracies or gaps caused by transform

**Color Match Photo Exercise (10)**

Objectives: Use Curves and Levels to match elements in Photoshop. Apply color perspective and atmospheric perspective to distant objects photorealistically.

**Graded on:**

5 points: used sky color to send object back, working non-destructively

5 points: Edge, grain and defocus concerns addressed

**Week Three: Production Option**

- Option 1: Deeper Concept Art
- Option 2: Life After People

**Week Four: Traditional Matte Painting**

- Lockdown shot with live action
- **“Life After People” shot**

**Traditional Matte Painting Project (20)**

Objectives: Apply compositional and photocompositing methods to a project with a creative brief. Create a “Life After People” shot showing an abandoned civilization in an advanced level of destruction. Incorporate some animation to bring life to the shot.

**Graded on:**

5 points: Work non-destructively when possible

5 points: Matching black and white points of added objects, general color correction

5 points: Accurately considered the object’s history when depicting decay state

5 points: Added animated elements and rendered a movie

**Week Five: 2D Painting Project**

- Select from idea pool:
  - Haunted House
  - Evil Fortress
  - Romantic Castle
  - Hellscape
  - Corporate HQ
  - Secret Base
- **Produce 3 concepts**
- **Start 2D painting**

**2D Matte Painting Concepts Project (15)**

Objectives: Continue to employ previsualization methods to creating production shots. Produce three viable concepts that can form the foundation of a final produced shot.

**Graded 5 X 3 paintings**

1 point: Composition

1 point: Color or Value

1 point: Worked Loose

1 point: Concept or idea

1 point: Worked with reference in mind

**Week Six: 2D Painting Project**

- **2D Painting**
- “Attila” case study
- **Dailies**

**2D Matte Painting (30)**

Objectives: Combine basic compositional and color concerns with photo compositing to create a fully-realized cinematic matte painting. This should also finish out as a QuickTime movie, and as such include some kind of animation or live action and a camera movement.

**Graded on:**

5 points: Composition

5 points: Perspective

5 points: Lighting/Color correction

5 points: Concept to execution

5 points: Animation or Live Action

5 points: Camera movement

**Week Seven: Comping**

- Bring the painting to life with animated elements
- Corner Pin Clouds
- Flags
- Live action elements
- **2D painting due**

**Week Eight: 2.5D and Multiplane Technique**

- Simple After Effects Multiplane set-up
- Photoshop Vanishing Point
- Advanced Multiplane in After Effects
- **2.5D shot**

**2.5D Matte Painting (10)**

Objectives: Explore multiplaning and “Vanishing Point” techniques on still footage in Adobe After Effects.

**Graded on:**

10 points: completed in-class exercise

**Week Nine 3D Painting Project**

- Convert a photo or your 2D painting
- **3D Match a Photo or Painting**
- Planning Elements
- Matching Camera
- Building Geometry

**3D Match Photo (10)**

Objectives: Using Autodesk Maya, perspective match a photo for use as the foundation of a projection mapped matte painting.

**Graded on**

5 points: find camera position and focal length

5 points: Build proxy geometry to receive a camera projection

**Week Ten: 3D Projection**

- Starting from 3D and moving to Projection
- Setting up Projection Shaders
- Animating Camera

**3D Projection Map Matte Painting (30)**

Objectives: Using Nuke or Maya, and the method of camera projection, create a six-second matte shot including a camera move.

**Graded on:**

10 points: Appropriate use of Camera/Animation  
10 points: Projection Quality/Accuracy  
10 points: Composition, Color and Light

**Week Eleven: 3D Projection**

- **Deliver Final 3D projection Shot**
- **Deliver Reel with Breakdowns**

**Basic Grading Criteria**

**Preproduction:** A thumbnail sketch, based on the original live action plate, is a good place to start for most projects. Blocking out in basic terms where the live action areas of the shot are, what are painted elements, if a camera move is present, are all part of the proposal. A good foundation is required before you can move on to detail work.

**Presentation:** Final presentation of the shot in proper playable format, aspect ratio correct to standard, and complete with shot breakdown. PSD file saved separately with layers intact, showing evidence of working non-destructively.

**Composition:** Is the painting laid out in such a way as to draw the eye in? Does it adhere to the principles of the Pyramid of Believability? Are the live action portions of the shot in the brightest areas?

**Lighting:** Are all elements illuminated in the same global lighting conditions? Shadow direction, light value and hue are all part of this.

**Perspective/Scale:** Are all added elements properly scaled to the original plate? Do the objects sit properly in the environment or do they appear to float? Are the elements drawn correctly towards a

vanishing point?

**Compositing:** Are the elements properly composited such that they seem to all be shot at once from a realistic camera-event? Are elements like grain, lens distortion, and lens flares handled appropriately? Is there a sense of atmosphere building as objects are distanced from camera? Do black and white values of composited materials match the source footage?

**Impression-Mood:** Is the shot an effective film-style establishing shot, creating a sense of mood appropriate to the subject matter? Are the elements aesthetically cohesive, as if from the same world?