



IUPUI

**SCHOOL OF INFORMATICS
AND COMPUTING**

DEPARTMENT OF HUMAN-CENTERED COMPUTING
Indiana University–Purdue University
Indianapolis

N341

Lighting and Materials

Department of Media Arts and Science /Human-Centered Computing Program

Indiana University School of Informatics and Computing, Indianapolis

Spring 2019

Course Info: Credit Hours: 3
Class Meeting Time: Tuesday 3-5:40
Location: IT 255, Informatics & Communications Technology
Complex
535 West Michigan Street, Indianapolis, IN 46202

Instructor Info: Name: Albert William
Office: IT 481
Email: almwilli@iupui.edu
Phone: 278-9204
Office Hours: Tuesday 12-3 PM and other times by
appointment

Prerequisites: N243

COURSE DESCRIPTION

This course focuses on the implementation of lighting and shading concepts that students will apply to typical high-end user scenarios. Students will produce portfolio quality graphics and apply these concepts to a variety of Media Arts and Sciences projects.

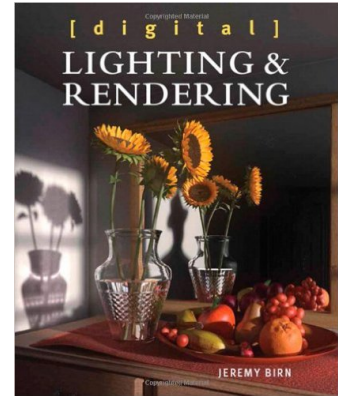
This is an intermediate class that will help students to operate conceptually and theoretically in the development of high quality 3D lighting and texturing which can be applied to various aspects of design and production.

REQUIRED TEXTBOOK

There is no required textbook. However, the following books are very good resources (both by Jeremy Birn):

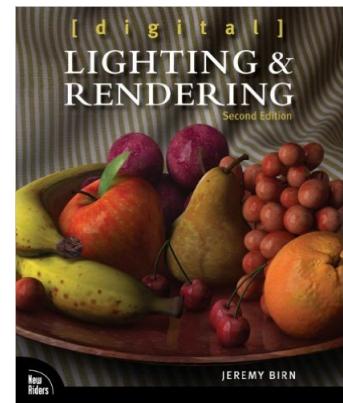
Digital Lighting and Rendering (3rd Edition) (Voices That Matter)

- Paperback: 464 pages
- Publisher: New Riders; 3 edition (November 21, 2013)
- Language: English
- ISBN-10: 0321928989
- ISBN-13: 978-0321928986



Digital Lighting and Rendering (2nd Edition)

- **Paperback:** 432 pages
- **Publisher:** New Riders; 2 edition (May 7, 2006)
- **Language:** English
- **ISBN-10:** 0321316312
- **ISBN-13:** 978-0321316318



CORE COMPETENCIES

1. Students will have the ability to perform advanced lighting and texturing utilizing various techniques applied within a digital scene.
2. Students will deliver production and portfolio quality simulations that deliver advanced aesthetics and 3D production workflow. High quality simulations will be expected.
3. Students will learn 3D concepts that work across all 3D software platforms.
4. Students must be able to conduct self-directed exploration, express and document ideas and themes in both written and spoken form.

OTHER MATERIALS RELATED TO THE COURSE

Storage media: A portable HD is strongly recommended.

A flash drive will be very useful.

Use of IUBox is highly recommended.

Students will be required to bring traditional writing materials to class to maintain a class notebook of lectures.

SOFTWARE USED

Autodesk Maya
 Adobe Photoshop, After Effects, Premiere, Media Encoder
 Crazybump
 Headus UV layout
 Substance Painter

COURSE STRUCTURE OVERVIEW

The course structure is composed of these parts:

Lectures / Lab

- This activity will be the majority of class time. It will include critical review of contemporary media as appropriate to class. Use of software packages to implement concepts into practice.

Quizzes

- Quizzes may be administered during class time.
- Quizzes may be part of Canvas learning modules

Projects:

- Tutorials and exercises will be assigned. The instructor will review the students' work and provide feedback.

Lab Notebook

- Students will be required to maintain a lab notebook of lecture points and turn in various sections that will be graded with selected projects

N341 Weekly Schedule (subject to change and revision)

Week 1 Jan 8 Intro, syllabus, concepts, lighting, color management, Arnold, Textures, networks, maya hypershader

Week 2 Jan 15 UV unwrapping, PSD networks, Photoshop Painting, texture maps,

Week 3 Jan 22 UV unwrapping, PSD networks, Photoshop Painting, texture maps,

Week 4 Jan 29 UV unwrapping **PROJECT # 1 DUE**

Week 5 Feb 5 UV unwrapping

Week 6 Feb 12 Arnold materials and lights

Week 7 Feb 19 Arnold materials and lights **PROJECT # 2 DUE**

Week 8 Feb 26 Arnold materials and lights

Week 9 Mar 5 Substance painter **PROJECT # 3 DUE**

Week 10 Mar 12 No Class

Week 11 Mar 19 Substance painter

Week 12 Mar 26 Substance painter

Week 13 Apr 5 Compositing **Project #4 DUE**

Week 14 Apr 12 In class work on final project **Project # 5 DUE**

Week 15 Apr 19 In class work on final project

Week 16 Apr 26 In class work on final project

Week 17 May 2 **NO CLASS Final Project DUE Apr 31**

Assignments

Project #1 (50 pts)- Reel #1

Project # 2 (100 pts)- Reel #2

Project #3 (150 pts)- Reel #3

Project #4 (50 pts)- Final Project Concept

Project # 5(200 pts) – Reel #4

Project # 6 (350 pts)- Final Project Reel

Attendance and class participation- (100 pts)

Quizzes- may be given at any given time and will be factored into the overall score for the semester

WEEK	DATE	ASSIGNMENT	DUE DATE	POINTS	%
1	Jan 8				
2	Jan 15				
3	Jan 22				
4	Jan 29	Project 1	Jan 28	50	5
5	Feb 5				
6	Feb 12				
7	Feb 19	Project 2	Feb 18	100	10
8	Feb 26				
9	Mar 5	Project 3	Mar 4	150	15
10	Mar 12				
11	Mar 19				
12	Mar 26				
13	Apr 2	Project 4	Apr 1	50	5
14	Apr 9	Project 5	Apr 8	200	20
15	Apr 16				
16	Apr 23				
17	May 2	Final Project		350	35
		Attendance and class participation		100	10

Principles of Undergraduate Learning (PUL):

Learning outcomes are assessed in the following areas:

- 1A. Core communication: written, oral and visual skills
- 1B. Core communication: quantitative skills
- 1C. Core communication: information resources skills
2. Critical thinking
3. Integration and application of knowledge
4. Intellectual depth, breadth, and adaptiveness
5. Understanding society and culture
6. Values and ethics

Learning Outcomes:

	RBT	PUL	Assessment
1. Project 1	6	3,2,4	Technical skills
2. Project 2	6	3,2,4	Technical skills
3. Project 3	6	3,2,4	Technical skills
4. Project 4	6	1A, 1C	Communication
5. Project 5	6	3,2,4	Technical skills
6. Project 6	6	3,2,4,1A	Technical skills

*RBT: Revised Bloom's Taxonomy

Grading Scale:

A+	100% +	Professional level work, showing highest level of achievement
A	93–99.99%	Extraordinarily high achievement, quality of work; shows command of the subject matter
A–	90–92.99%	Excellent and thorough knowledge of the subject matter
B+	87–89.99%	Above average understanding of material and quality of work
B	83–86.99%	Mastery and fulfillment of all course requirements; good, acceptable work
B–	80–82.99%	Satisfactory quality of work
C+	77–79.99%	Modestly acceptable performance and quality of work
C	73–76.99%	Minimally acceptable performance and quality of work
C–	70–72.99%	Unacceptable work (Core course must be repeated for credit)
D+	67–69.99%	Unacceptable work (Course must be repeated for credit)
D	63–66.99%	Unacceptable work
D–	60–62.99%	Unacceptable work
F	Below 60	Unacceptable work

Please note that the minimum grade for credit towards a major (both core and electives), minor, or certificate is a grade of C.

POLICIES CONCERNING ASSIGNMENT/PROJECT DEADLINES

- **NO LATE PROJECTS WILL BE ACCEPTED.**
- **Any project will be assigned a score of 0 (zero) points if not turned in by the stated project deadline.**
- Please check Canvas assignments to determine when your project is due. It is your responsibility to understand due dates.
- Please check Canvas assignments to determine the proper way to turn in the project due. **All** projects will be turned in through the assignment tab on Canvas.
- In the event that Canvas is not available, only IUBox may be used as a secondary upload site. Please refer to the PDF “Policy for Failed Canvas Submission” posted in the course syllabus section and follow stated procedures.
- If projects exceed 200 MB in size, then only IUBox may be used as a secondary upload site. Please refer to the PDF “Policies for Project Submission Through IUBox” posted in the course syllabus section and follow stated procedures..
- Please label **all** media appropriately. Points will be taken off for improperly

labeled media and assignments

- Example for file: lastName_ClassNumber_projectName.fileExtension
 - JoanSmith_N100_project 1.jpg
- Example for media: Joan Smith, Class ###, Project ###
 - Joan Smith N100 Project 1
- Meeting project checkpoints will be required for full point credit on projects. Please reference the Canvas assignment for specifics on each project.
- Midterm and Final exams/presentations will only be administered during set class times. A score of 0 (zero) points will be assessed on any exams not taken during class.
 - Exams will only be scored if a signed exam sheet is turned in on the day of the test
- In class quizzes that are missed will be scored a zero and no make up quizzes will be administered.
- Project grades may be challenged for one week after being posted. Project grades not challenged with-in seven calendar days will be final.

OTHER CONSIDERATIONS

- Please come to class on time and be prepared to start on time.
- Participation in class discussions, including class critiques and any written papers or critiques are required and will be considered in final grading.
- Students will develop and present individual projects unless otherwise approved in writing from the instructor.
- All electronic devices should be turned off and not used during the entirety of class time.
- Social sites such as Facebook, Twitter, or any others, may not be accessed during class time.
- Work for other courses may not be done during this class time.
- If you need to leave class early, please inform the instructor in advance.
- **Food is strictly forbidden** in the computer labs.
- **Laptops should only be used for taking notes, not for running advanced software. All in-class work must be performed on lab computers.**
- The outcomes and artifacts developed for any one class in Media Arts and Sciences at IUPUI cannot be the same or overly similar between semesters or in the same semester for one student or group of students or one faculty or group of faculty. The project must be differentiated, the expectations for the project outlined, and the faculty involved, notified and in agreement prior to the semester beginning. In other words, all projects must be unique and may not be used from one class to another without instructor permission.

EXPECTATIONS, GUIDELINES, AND POLICIES

Attendance:

A basic requirement of this course is that you will participate in all class meetings, whether online or face-to-face, and conscientiously complete all required course activities and assignments. Class attendance is required for classroom-based courses. It entails being present and attentive for the entire class period. Attendance shall be taken in every class.

Attendance will be taken at the beginning of class by the instructor or teaching assistant. Students present at the beginning of class will receive full credit for attendance. Students arriving after attendance has been taken will receive 80% credit for that class period: it is the responsibility of the late arriving students to contact the instructor or TA at the end of class to make sure they are marked late and not absent. Students who do not attend will be marked absent and will receive 0% attendance for the class period.

Only the following are acceptable excuses for absences: death in the immediate family (e.g. mother, father, spouse, child, or sibling), hospitalization or serious illness; jury duty; court ordered summons; religious holiday; university/school coordinated athletic or scholastic activities; an unanticipated event that would cause attendance to result in substantial hardship to one's self or immediate family. Absences must be explained with the submission of appropriate documentation to the satisfaction of the instructor, who will decide whether missed work may be made up. Absences that do not satisfy the above criteria are considered unexcused. To protect your privacy, doctor's excuses should exclude the nature of the condition and focus instead on how the condition impacts your attendance and academic performance.

Missing class reduces your grade through the following grade reduction policy: Each class factors into a score of 100 points. Any missed or late classes will reduce this score. You are allowed two excused or unexcused absences. Each additional absence, unless excused, results in a 5% reduction in your final course grade. **More than six absences will result in an F in the course.** Missing class may also reduce your grade by eliminating opportunities for class participation. For all absences, the student is responsible for all covered materials and assignments.

Deliverables:

You are responsible for completing each deliverable (e.g., assignment, quiz) by its deadline and submitting it by the specified method. Deadlines are outlined in the syllabus or in supplementary documents accessible through Canvas. Should you miss a class, you are still responsible for completing the deliverable and for finding out what was covered in class, including any new or modified deliverable. In fairness to the instructor and students who completed their work on time, projects will only be graded if submitted by the stated deadline.

Incomplete:

The instructor may assign an Incomplete (I) grade only if at least 75% of the required coursework has been completed at passing quality and holding you to previously established time limits would result in unjust hardship to you. All unfinished work must be completed

by the date set by the instructor. Left unchanged, an Incomplete automatically becomes an F after one year. <http://registrar.iupui.edu/incomp.html>

CODE OF CONDUCT

All students should aspire to the highest standards of academic integrity. Using another student's work on an assignment, cheating on a test, not quoting or citing references correctly, or any other form of dishonesty or plagiarism shall result in a grade of zero on the item and possibly an F in the course. Incidences of academic misconduct shall be referred to the Department Chair and repeated violations shall result in dismissal from the program.

All students are responsible for reading, understanding, and applying the *Code of Student Rights, Responsibilities and Conduct* and in particular the section on academic misconduct. Refer to *The Code > Responsibilities > Academic Misconduct* at <http://www.indiana.edu/~code/>. All students must also successfully complete the Indiana University Department of Education "How to Recognize Plagiarism" Tutorial and Test. <https://www.indiana.edu/~istd> You must document the difference between your writing and that of others. Use quotation marks in addition to a citation, page number, and reference whenever writing someone else's words (e.g., following the *Publication Manual of the American Psychological Association*). To detect plagiarism instructors apply a range of methods, including Turnitin.com. <http://www.ulib.iupui.edu/libinfo/turnitin>

Academic Misconduct:

1. **Cheating:** Cheating is considered to be an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.
 - a. A student must not use external assistance on any "in-class" or "take-home" examination, unless the instructor specifically has authorized external assistance. This prohibition includes, but is not limited to, the use of tutors, books, notes, calculators, computers, and wireless communication devices.
 - b. A student must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advanced authorization from the instructor to whom the work is being submitted.
 - c. A student must not use materials from a commercial term paper company, files of papers prepared by other persons, or submit documents found on the Internet.
 - d. A student must not collaborate with other persons on a particular project and submit a copy of a written report that is represented explicitly or implicitly as the student's individual work.
 - e. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.
 - f. A student must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.

- g. A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom the work is being submitted.
 - h. A student must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.
2. **Fabrication:** A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citation to the sources of information.
 3. **Plagiarism:** Plagiarism is defined as presenting someone else's work, including the work of other students, as one's own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered "common knowledge" may differ from course to course.
 - a. A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.
 - b. A student must give credit to the originality of others and acknowledge indebtedness whenever:
 1. directly quoting another person's actual words, whether oral or written;
 2. using another person's ideas, opinions, or theories;
 3. paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
 4. borrowing facts, statistics, or illustrative material; or
 5. offering materials assembled or collected by others in the form of projects or collections without acknowledgment
 4. **Interference:** A student must not steal, change, destroy, or impede another student's work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any student's grade or the evaluation of academic performance. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.
 5. **Violation of Course Rules:** A student must not violate course rules established by a department, the course syllabus, verbal or written instructions, or the course materials that are rationally related to the content of the course or to the enhancement of the learning process in the course.
 6. **Facilitating Academic Dishonesty:** A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct, nor allow another student to use his or her work or resources to commit an act of misconduct.

OTHER POLICIES

1. **Administrative withdrawal:** A basic requirement of this course is that students participate in all class discussions and conscientiously complete all required course activities and/or assignments. If a student is unable to attend, participate in, or complete an assignment on time, it is the student's responsibility to inform the instructor. If a student misses more than half of the required activities within the first 25% of the course

without contacting the instructor, the student may be administratively withdrawn from this course. Administrative withdrawal may have academic, financial, and financial aid implications. Administrative withdrawal will take place after the full refund period, and a student who has been administratively withdrawn from a course is ineligible for a tuition refund. Contact the instructor with questions concerning administrative withdrawal.

2. **Civility:** To maintain an effective and inclusive learning environment, it is important to be an attentive and respectful participant in lectures, discussions, group work, and other classroom exercises. Thus, unnecessary disruptions should be avoided, such as ringing cell phones, engagement in private conversations, and other unrelated activities. Cell phones, media players, or any noisy devices should be turned off during a class. Texting, surfing the Internet, and posting to Facebook or Twitter during class are generally not permitted. Laptop use may be permitted if it is used for taking notes or conducting class activities. Students should check with the instructor about permissible devices in class. IUPUI nurtures and promotes “a campus climate that seeks, values, and cultivates diversity in all of its forms and that provides conditions necessary for all campus community members to feel welcomed, supported, included, and valued” (IUPUI Strategic Initiative 9). IUPUI prohibits “discrimination against anyone for reasons of race, color, religion, national origin, sex, sexual orientation, marital status, age, disability, or veteran status” (Office of Equal Opportunity). Profanity or derogatory comments about the instructor, fellow students, invited speakers or other classroom visitors, or any members of the campus community shall not be tolerated. A violation of this rule shall result in a warning and, if the offense continues, possible disciplinary action.
3. **Communication:** For classroom-based courses, the instructor or teaching assistant should respond to emails by the end of the next class or, for online courses, within two Indiana University working days, which excludes weekends and holidays. The instructor should provide weekly office hours or accept appointments for face-to-face, telephone, or teleconferenced meetings, and announce periods of extended absence in advance.
4. **Counseling and Psychological Services (CAPS):** Students seeking counseling or other psychological services should contact the CAPS office by phone at 274-2548 or email at capsindy@iupui.edu. For more information visit <http://life.iupui.edu/caps/>.
5. **Course evaluations:** Course evaluations provide vital information for improving the quality of courses and programs. Students are urged to complete one course and instructor evaluation for each section in which they are enrolled at the School of Informatics and Computing with the following three exceptions: (a) The student has withdrawn from the course; (b) fewer than five students are enrolled in the section (in which case maintaining anonymity is difficult); and (c) the section is a laboratory that must be taken with a course having a different section number. Course evaluations are completed at <https://soic.iupui.edu/app/course-eval/>. Course evaluations are typically open from the eleventh week. Course evaluations are anonymous, which means that no one can view the name of the student completing the evaluation. In addition, no one can view the evaluation itself until after the instructor has submitted the final grades for the course. In small sections, demographic information should be left blank, if it could be used to identify the student.

6. **Disabilities policy:** In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to reasonable accommodations. Please notify the instructor during the first week of class of accommodations needed for the course. Students requiring accommodations because of a disability must register with Adaptive Educational Services (AES) and complete the appropriate AES-issued before receiving accommodations. The AES office is located at UC 100, Taylor Hall (Email: aes@iupui.edu, Tel. 317 274-3241). Visit <http://aes.iupui.edu> for more information.
7. **Email:** Indiana University uses your IU email account as an official means of communication, and students should check it daily for pertinent information. Although you may have your IU email forwarded to an outside email account, please email faculty and staff from your IU email account.
8. **Emergency preparedness:** Safety on campus is everyone's responsibility. Know what to do in an emergency so that you can protect yourself and others. For specific information, visit the emergency management website. <http://protect.iu.edu/emergency>
9. **IUPUI course policies:** A number of campus policies governing IUPUI courses may be found at the following link: http://registrar.iupui.edu/course_policies.html
10. **No class attendance without official enrollment.** Only those who are officially enrolled in this course may attend class unless they are enrolled as an auditor or making up an Incomplete by prior arrangement with the instructor. This policy does not apply to those assisting a student with a documented disability, serving in an instructional role, or administrative personnel. <http://registrar.iupui.edu/official-enrollment-class-attendance.html> Children may *not* attend class with their parents, guardians, or childcare providers.
11. **Right to revise:** The instructor reserves the right to make changes to this syllabus as necessary and, in such an event, will notify students of the changes immediately.
12. **Student advocate:** The Student Advocate provides assistance to students with personal, financial, and academic issues. The Student Advocate Office is located in the Campus Center, Suite 350. The Student Advocate may also be contacted by phone at 317 274-4431 or by email at studvoc@iupui.edu. For more information visit <http://studentaffairs.iupui.edu/advocate>.

MISSION STATEMENT

The Mission of IUPUI is to provide for its constituents excellence in

- Teaching and Learning;
- Research, Scholarship, and Creative Activity; and
- Civic Engagement.

With each of these core activities characterized by

- Collaboration within and across disciplines and with the community;
- A commitment to ensuring diversity; and
- Pursuit of best practices.

IUPUI's mission is derived from and aligned with the principal components—Communities of Learning, Responsibilities of Excellence, Accountability and Best Practices—of Indiana University's Strategic Directions Charter.

STATEMENT OF VALUES

IUPUI values the commitment of students to learning; of faculty to the highest standards of teaching, scholarship, and service; and of staff to the highest standards of service. IUPUI recognizes students as partners in learning. IUPUI values the opportunities afforded by its location in Indiana's capital city and is committed to serving the needs of its community. Thus, IUPUI students, faculty, and staff are involved in the community, both to provide educational programs and patient care and to apply learning to community needs through service. As a leader in fostering collaborative relationships, IUPUI values collegiality, cooperation, creativity, innovation, and entrepreneurship as well as honesty, integrity, and support for open inquiry and dissemination of findings. IUPUI is committed to the personal and professional development of its students, faculty, and staff and to continuous improvement of its programs and services.