New Course Request

Indiana University
Indianapolis Campus

Check Appropriate Boxes:
- Undergraduate credit [X]
- Graduate credit []
- Professional credit []

<table>
<thead>
<tr>
<th>1. School/Division</th>
<th>Science</th>
<th>2. Academic Subject Code</th>
<th>FIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Course Number</td>
<td>260</td>
<td>(must be cleared with University Enrollment Services)</td>
<td>4. Instructor</td>
</tr>
<tr>
<td>5. Course Title</td>
<td>Scientific Digital Imaging I</td>
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</tbody>
</table>

Recommended Abbreviation (Optional) Sci Digital Image I
(Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year): Spring/2006

7. Credit Hours: Fixed at [3] or Variable from ________ to ________

8. Is this course to be graded S-F (only)? Yes [ ] No [X]

9. Is variable title approval being requested? Yes [ ] No [X]

10. Course description (not to exceed 50 words) for Bulletin publication: **Digital imaging technology provides the opportunity for increased efficiency and effectiveness in processing images for legal matters. It is possible to more quickly capture the right images and it is possible to extract more information from images using high-speed computers and advanced software. This course teaches the techniques and processes that can be used.**

11. Lecture Contact Hours: Fixed at [3] or Variable from ________ to ________

12. Non-Lecture Contact Hours: Fixed at [0] or Variable from ________ to ________

13. Estimated enrollment: [20] of which [0] percent are expected to be graduate students.

14. Frequency of scheduling: fall/spring. **Will this course be required for majors? Yes.**

15. Justification for new course: **Course exists in Informatics. This is to transfer ownership.**

16. Are the necessary reading materials currently available in the appropriate library? Yes.

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant. **Course overlaps with INFO-1260, which will be discontinued.**

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by: ___________________________ Date 4/16/07

Approved by: ___________________________ Date 4/23/07

Department/Division Director

Dean

Dean of Graduate School (when required)

Chancellor/Vice-President

University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.
### Course Request Form

**Department:** Forensic and Investigative Sciences  
**Effective Session:** Spring 2009

**Instructions:** Please check the items below which describe the purpose of this request.

- [ ] New course with supporting documents
- [ ] Add existing course offered at another campus
- [ ] Extension of a course
- [ ] Change in course number
- [ ] Change in course title
- [ ] Change in course credit type
- [ ] Change in course attributes (department head signature only)
- [ ] Change in instructional hours
- [ ] Change in course description
- [ ] Change in course requisites
- [ ] Change in semesters offered (department head signature only)
- [ ] Transfer from one department to another

**PROPOSED:**

- **Subject Abbreviation:** FIS  
- **Course Number:** 200  
- **Long Title:** Scientific Digital Imaging I
- **Short Title:** Sci Digital Imaging

**EXISTING:**

- **Subject Abbreviation:**  
- **Course Number:**  

**Terms Offered:**

- Summer  
- Fall  
- Spring

**Campus(es) Involved:**

- Calumet  
- Ft. Wayne  
- Indianapolis  
- Tech Statewide  
- W. Lafayette

**Credit Type:**

1. Fixed Credit: 3 Cr. Hrs.
2. Variable Credit Range:  
   - Minimum Cr. Hrs: X
   - Maximum Cr. Hrs:  
3. Equivalent Credit: Yes  
4. Thesis Credit: Yes  
5. Instructor
6. Registration Approval Type: Instructor
7. Full Time Privilege
8. Off Campus Experience

**Course Attributes:**

- Lecture
- Recitation
- Presentation
- Laboratory
- Lab Prep
- Studio
- Distance
- Clinic
- Experiential
- Research
- Ind. Study
- Proto/Oberv

**Course Description (Include Requisites):**

Digital imaging technology provides the opportunity for increased efficiency and effectiveness in processing images for legal matters. It is possible to more quickly capture the right images and it is possible to extract more information from images using high-speed computers and advanced software. This course teaches the techniques and processes that can be used.

**Signature:**

- Calumet Department Head: [Signature]  
- Calumet School Dean: [Signature]
- Fort Wayne Department Head: [Signature]  
- Fort Wayne School Dean: [Signature]
- Indianapolis Department Head: [Signature]  
- Indianapolis School Dean: [Signature]
- North Central Department Head: [Signature]  
- North Central Chancellor: [Signature]
- West Lafayette Department Head: [Signature]  
- West Lafayette College/School Dean: [Signature]  
- West Lafayette Registrar: [Signature]

**Office of the Registrar**
Scientific Digital Imaging I
Course #1260

Herbert Blitzer 317-356-0245
Jack Jacobia 317-356-0245
hblitzer@ifi-indy.org jjacobia@ifi-indy.org

Course Description:
This course, by lecture, demonstration and practical “hands-on” training, teaches photographic techniques and advanced methods needed for processing images that might be used for courtroom purposes. The mathematical and scientific principles that are the basis for these methods will be described. It is based upon the use of Adobe Photoshop, digital cameras, computers, and scanners. Digital imaging methods, consistent with the guidelines of the Scientific Working Group on Imaging Technology of the Federal Bureau of Investigation will be utilized to produce high quality, valid and reliable images suitable for courtroom related applications. Students completing this course will be able to predict anticipated results and answer probing scientific questions regarding choices made for a given assignment while giving testimony.

The use and selection of equipment for efficient imaging, as well as the software needed to effectively enhance evidentiary images are addressed.

Objective:
Capture evidentiary images with the digital camera and scanners, download the images and use the tools in Adobe Photoshop to enhance the images, while recording a log of all the actions and maintaining the integrity of each image. Archive the primary images and place them in a database for future use in the courtroom.

Topics included are:
- Introduction to Digital Imaging
- System Diagnostics
- Introduction to Adobe Photoshop
- History and Actions
- Plug-in filters
- Hashing and Downloading images
- Human Color Vision
- Building Physical Images
- Basic Principles of Forensics
- Image enhancement tools
- Using layers
- Digital cameras and Scanners
- Archiving Images
- Archiving images
- Setting Exposure
- Image Structure

Recommended Equipment:
Digital camera kit
Tripod
Spare batteries for camera and flash (or charger for the flash power system); AC adapters
Course Schedule:

Day One:
- Basic Principles of Forensics
- Human Color Vision/Color Space
- Making Physical Images
- Dynamic range
- System Response
- Lenses
- Setting Exposures
- Image Structure

Day Two:
- Introduction to Digital Imaging
- System Diagnostics
- Introduction to Adobe Photoshop
- Image Enhancement techniques

Day Three:
- Use of the History and Actions tools
- Working with various types of Layers

Day Four:
- Plug-in Filters
- Digital Cameras
- Scanners
- Hashing and Downloading

Day Five:
- Archiving Images
- Videography
- Script writing
- Video documentation of a crime scene

Day Six:
- Video capture and enhancement
- Working with video files
- General course review
Class Exercises

1. Image Enhancement
2. History/Actions
3. PhotoShop
4. Plug In Filter Exercise
5. Digital Camera/Scanner practice
6. Videography exercise
7. Final Exercise

Assignment Submission and Guidelines

You will be given adequate time during class to complete your assignments. All grades will be posted by the next class session. Please note: No late assignments will be accepted.

The labs assigned in this class will make up 50% of your final grade. The final exercise and exam makes up 50% of your final grade.

<table>
<thead>
<tr>
<th>Image Enhancement Exercises</th>
<th>Exercises are</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise</td>
<td>50% of your grade</td>
</tr>
<tr>
<td>Action Log Exercise</td>
<td>50% of your grade</td>
</tr>
<tr>
<td>Layers Exercise</td>
<td>50% of your grade</td>
</tr>
<tr>
<td>Plug-in Filter Exercise</td>
<td>50% of your grade</td>
</tr>
<tr>
<td>Final Exercise</td>
<td>25% of your grade</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25% of your grade</td>
</tr>
</tbody>
</table>

Grading Scale

Minimum %

100.0  A+
95.0   A
90.0   A-
87.0   B+
83.0   B
80.0   B-
77.0   C+
73.0   C
70.0   C-
67.0   D+
63.0   D
60.0   D-
0.0    F
Academic Misconduct
(Taken from Academic Handbook, 2001 and the Code of Student Rights, Responsibilities, and Conduct)
http://www.life.iupui.edu/Who/Dean/Code

The Academic Handbook states that faculty members have the responsibility of fostering the "intellectual honesty as well as the intellectual development of students...The faculty member should explain clearly the meaning of cheating and plagiarism as they apply to the course...Should the faculty member detect signs of plagiarism or cheating, it is his or her most serious obligation to investigate these thoroughly, to take appropriate action with respect to the grades of students, and in any event to report the matter to the Dean of Students. The necessity to report every case of cheating, whether or not further action is desirable, arises particularly because of the possibility that this is not the student's first offense, or that other offenses may follow it. Equity also demands that a uniform reporting practice be enforced; otherwise, some students will be penalized while others guilty of the same actions will go free." (p. 172).

Academic Misconduct: (from the Code of Student Rights, Responsibilities, and Conduct)

1. Cheating: A student must not use or attempt to use unauthorized assistance, materials, information, or study aids in any academic exercise, including, but not limited to, the following:

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, and calculators.

b. A student must not use another person as a substitute in the taking of an examination or quiz.

c. A student must not steal examinations or other course materials.

d. A student must not allow others to conduct research or to prepare work for him or her without advance authorization from the instructor to whom the work is being submitted. Under this prohibition, a student must not make any unauthorized use of materials obtained from commercial term paper companies or from files of papers prepared by other persons.

e. A student must not collaborate with other persons on a particular project and submit a copy of a written report which is represented explicitly or implicitly as the student's individual work.

f. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on field work.

g. A student must not submit substantial portions of the same academic work for credit or honors more than once without the permission of the instructor to whom the work is being submitted.

h. A student must not alter a grade or score in any way.

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 citations to the sources of information.

3. Plagiarism: A student must not adopt or reproduce ideas, words, or statements of another person without appropriate acknowledgment. A student must give credit to the originality of others and acknowledge indebtedness whenever he or she does any of the following:

a. Quotes another person's actual words, either oral or written;
b. Paraphrases another person’s words, either oral or written;

c. Uses another person’s idea, opinion, or theory; or

d. Borrows facts, statistics, or other illustrative material, unless the information is common knowledge.

4. Interference

a. A student must not steal, change, destroy, or impede another student’s work. 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.

b. A student must not give or offer a bribe, promise favors, or make threats with the intention of affecting a grade or the evaluation of academic performance.

Faculty Action

If a faculty member has information that one of his/her students committed an act of academic misconduct, the faculty member is required to hold an informal conference with the student. The conference should be prompt and private. If the faculty member concludes that the student is responsible for the misconduct, then the faculty member is authorized to impose an appropriate academic sanction (i.e., lower or failing grade on the assignment, assessing a lower or failing grade for the course).

After reporting the information to the Dean of Students, he/she will review the information to determine if additional sanctions should be applied.

Sanctions are outlined in the Code of Student Rights, Responsibilities, and Conduct. This document appears on the web at the following address: http://www.iupui.edu/Who/Dean/Code/

Policy on Student Academic Misconduct

Faculty are required to report all incidents of academic misconduct to the Dean of Students. For information about policies and procedures, including due process requirements, see the Code of Student Rights, Responsibilities, and Conduct, especially part III: Student Misconduct and Part IV: Student Disciplinary Procedures. The code is accessible on the internet at http://www.iupui.edu/Who/Dean/Code/

If you need any special accommodations due to a disability, please contact Adaptive Educational Services at (317)-274-3241. The office is located in CA 001E.
## INSTITUTE FOR FORENSIC IMAGING

**Scientific Digital Imaging Part I**

**Course # FIS260**

<table>
<thead>
<tr>
<th>Friday Day 1</th>
<th>Friday Day 2</th>
<th>Friday Day 3</th>
<th>Friday Day 4</th>
<th>Friday Day 5</th>
<th>Friday Day 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 to 8:15</td>
<td>Registration</td>
<td>8:00 to 8:15</td>
<td>8:00 to 8:15</td>
<td>8:00 to 8:15</td>
<td>8:00 to 8:15</td>
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<tr>
<td>8:15 to 8:30</td>
<td>Orientation</td>
<td>Basic Principles</td>
<td>Digital Imaging</td>
<td>History and</td>
<td>Plug-in Filters</td>
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<tr>
<td>8:30 to 8:50</td>
<td>Basic Principles</td>
<td>to</td>
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<td>to</td>
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<tr>
<td>8:50 to 9:00</td>
<td>System</td>
<td>Diagnostics</td>
<td>Actions</td>
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<tr>
<td>9:00 to 9:30</td>
<td>Human Color Vision</td>
<td>Color Space</td>
<td>Introduction to</td>
<td>History and</td>
<td>Plug-in Filter</td>
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<tr>
<td>9:30 to 10:00</td>
<td>Human Color Vision</td>
<td>to</td>
<td>to</td>
<td>10:00</td>
<td>9:30</td>
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<tr>
<td>10:00 to 10:30</td>
<td>Color Space</td>
<td>Making</td>
<td>PhotoShop &amp; Basic</td>
<td>Action</td>
<td>Digital</td>
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<td>10:30 to 11:00</td>
<td>Color Space</td>
<td>to</td>
<td>to</td>
<td>10:00</td>
<td>11:00</td>
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<tr>
<td>11:00 to 12:00</td>
<td>Color Space</td>
<td>Physical Images</td>
<td>Exercise</td>
<td>Exercise</td>
<td>Camaras</td>
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<tr>
<td>12:00</td>
<td>Color Space</td>
<td>to</td>
<td>12:00</td>
<td>12:00</td>
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<tr>
<td>12:00 to 1:00</td>
<td>Lunch</td>
<td>12:00 to 1:00</td>
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<tr>
<td>1:00 to 1:30</td>
<td>Dynamic Range System Response</td>
<td>Cont'</td>
<td>Working with</td>
<td>Scanners</td>
<td>1:00 to</td>
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<tr>
<td>1:30 to 2:00</td>
<td>System Response</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>1:00</td>
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<tr>
<td>2:00 to 3:00</td>
<td>Lenses Setting Exposure</td>
<td>Image Enhancement Exercise</td>
<td>Layers</td>
<td>Hashing and Downloading</td>
<td>2:00 to 4:00</td>
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<tr>
<td>3:00 to 4:00</td>
<td>Image Structure</td>
<td>Exercise</td>
<td>3:00 to 5:00</td>
<td>3:00 to 5:00</td>
<td>2:00</td>
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<tr>
<td>3:00 to 5:00</td>
<td>Image Structure</td>
<td>More Adobe</td>
<td>PhotoShop Exercise</td>
<td>Camera</td>
<td>Critique Videos</td>
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<tr>
<td>4:00 to 5:00</td>
<td>Discussion Period</td>
<td>PhotoShop</td>
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### Course Breakdown

- **Lecture**: 31.5 hrs
- **Lab**: 16.5 hrs
- **Total In-Class**: 48 hrs