IMAGING INFORMATICS — CERTIFICATE

Program director
Timothy Seavey

This program provides the foundation necessary for its graduates to function as picture archival communication systems (PACS) administrators. Advances in technology drive radiology departments to continuously adopt new means for increasing productivity, quality, and efficiency. This often translates into a complex system of servers, networks, and imaging equipment. Management of these systems involves a special skill set crossing between information technology and radiography. These specialized people are usually termed PACS administrators.

Distance education
The Imaging Informatics Program is an online program open to qualified applicants residing in states authorizing/recognizing students from Loma Linda University.

Program outcomes
Upon completion of the program, the graduate should be qualified to:

Outcome 1 Management: Demonstrate leadership and critical thinking in the management of imaging informatics.
Outcome 2 Professionalism: Behave in a professional manner in all interactions in imaging informatics.
Outcome 3 Standards and Practices: Comply with the current standards and practices set by governing bodies within the imaging and medical field.
Outcome 4 Knowledge: Improve knowledge and skills in imaging informatics.

Program design
The program will consist of eight 3-unit core courses and one religion course, totaling 26 quarter units. The student will be assessed using quizzes, papers, group discussion, laboratory assignments, and projects. Completion of the informatics certificate counts for two points of the seven required to qualify for the American Board of Imaging Informatics Examination (see <http://www.ABII.org>).

Students can utilize the courses in the Imaging Informatics Program as an emphasis within the Bachelor of Science degree in radiation sciences at LLU (see the program director for details).

Loma Linda University does not guarantee employment for graduates from this program.

Admissions
Admission is based on a selective process. In addition to Loma Linda University (http://llucatalog.llu.edu/about-university/admission-policies-information/#admissionrequirementstext) and School of Allied Health Professions admissions requirements (http://llucatalog.llu.edu/allied-health-professions/#generalregulationstext), the applicant must also complete the following requirements:

- Copy of current state and/or national license/certification
- One-page essay describing applicant’s personal and professional skills and accomplishments, interests, career goals, and how the Imaging Informatics program will help achieve career goals
- Telephone interview (to be scheduled after application has been submitted)
- Proof of having completed a medical radiography associate-level certificate from an accredited institution, or evidence of compliance with the American Registry of Radiologic Technology (ARRT) regulations for limited technicians using computed radiography (CR) and direct capture radiography (DR)
- Minimum two years experience with digital imaging in applicant’s work place, or, a recommended CR/DR course (available online at Loma Linda University). Special considerations can be made by the program director on a case-by-case basis. For clarification and to insure proper advisement, please contact the program director, Timothy Seavey, via e-mail <tseavey@llu.edu> prior to starting the application process.
- It is preferred that applicants meet at least one of the following:
  - Certification by the American Registry of Radiologic Technology (ARRT), Diagnostic Radiography
  - Good standing with the American Registry of Radiologic Technology (ARRT) Limited Tech CR/DR

The applicant’s recommendations, telephone interview, and work experience are also considered in the admissions screening process.

Program requirements

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<thead>
<tr>
<th>Quarter</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>Autumn Quarter</td>
<td>RTI 354</td>
<td>Introduction to Informatics</td>
<td>3</td>
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<tr>
<td></td>
<td>RTI 368</td>
<td>Communication and Education in Imaging Informatics</td>
<td>3</td>
</tr>
<tr>
<td>Winter Quarter</td>
<td>RTI 364</td>
<td>Administrative Issues in Informatics</td>
<td>3</td>
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<tr>
<td></td>
<td>RTI 378</td>
<td>Systems Management in Informatics</td>
<td>3</td>
</tr>
<tr>
<td>Spring Quarter</td>
<td>RTI 374</td>
<td>Image Management in Informatics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>RTI 356</td>
<td>Information Technology in Radiology</td>
<td>3</td>
</tr>
<tr>
<td>Summer Quarter</td>
<td>RTI 358</td>
<td>PACS Planning and Implementation</td>
<td>3</td>
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<tr>
<td></td>
<td>RTI 384</td>
<td>Advanced Imaging Informatics</td>
<td>3</td>
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<tr>
<td></td>
<td>RELE 457</td>
<td>Christian Ethics and Health Care</td>
<td>2</td>
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<tr>
<td></td>
<td></td>
<td>Total Units:</td>
<td>26</td>
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Religion course is selected based upon academic plan with the student.

Normal time to complete the program
44 weeks (4 academic quarters) — based on half-time enrollment
Courses

RTII 354. Introduction to Informatics. 3 Units.
Provides students with a challenging introduction to and basic overview of computer fundamentals. Offers In-depth insight into the components that comprise a picture-archiving and communication system (PACS), including but not limited to basic terminology, computed radiography, digital radiography, hospital information systems, radiology information systems, DICOM, and HL-7. Online instruction utilizing Blackboard exposes students to topics via reading, PowerPoint, videos, and other interactive resources. Challenges students to demonstrate critical problem-solving skills required to create and design basic models of a PACS system, as well as to troubleshoot issues related to such systems.

RTII 356. Information Technology in Radiology. 3 Units.
Introduces the basic principles behind developing and maintaining a network within a radiology health care enterprise. Topics include, but are not limited to: basic terminology, network components, network design and implementation, storage and archive assessment, hard- and software implementation databases, IT standards, and replacement schedules. Online instruction utilizing Blackboard exposes students to topics via reading, PowerPoint, videos, and other interactive resources. Challenges the student to create and design basic models of a network. Requires the student to demonstrate the critical problem-solving skills required to troubleshoot issues in a network.

RTII 358. PACS Planning and Implementation. 3 Units.
Studies the steps needed to successfully procure a picture-archiving and communications system (PACS) in a radiology department of any size. Focuses on organizational readiness, proposal requests, vendor selection, contracts, and cost strategies. Online instruction utilizing Blackboard, group discussions, and various online learning mediums challenge students to demonstrate not only critical-thinking skills in the planning environment, but also team-building and project management abilities. Includes two major projects.

RTII 364. Administrative Issues in Informatics. 3 Units.
Focuses on issues in informatics faced by a picture-archiving and communications system (PACS) administrator. Facilitates understanding of the architecture of a PACS and the details of running the business aspects of such a system. Topics include, but are not limited to: project management, operations management, relationships in health care, quality-improvement procedures, emergency protocols, and compliance with federal regulations.

RTII 368. Communication and Education in Imaging Informatics. 3 Units.
Focuses on basic communication skills a picture-archiving and communications systems (PACS) administrator should possess. Topics include, but are not limited to: relationships in health care, medical terminology, educational concerns, feedback mechanisms, evaluation processes, effective communication, and quality education and training programs. Online instruction utilizes Blackboard, text, video, PowerPoint, and other interactive online resources.

RTII 374. Image Management in Informatics. 3 Units.
Focuses on basic image-management tasks that a picture-archiving and communications system (PACS) administrator must complete on a daily basis. Topics include but are not limited to: environmental design, human-computer interface evaluation, database retrieval, and problem solving. Online instruction using Blackboard incorporates text, video, PowerPoint, and other interactive resources.

RTII 378. Systems Management in Informatics. 3 Units.
Focuses on basic systems management tasks that a picture-archiving and communications system (PACS) administrator must complete on a daily basis. Topics include but are not limited to: capacity and throughput, disaster recovery and continuity, problem management, data migration, and data security. Online instruction using Blackboard incorporates text, video, PowerPoint, and other interactive resources.

RTII 384. Advanced Imaging Informatics. 3 Units.
An in-depth study of the advanced imaging informatics skills required of a picture-archiving and communications system (PACS) administrator. Topics include but are not limited to: medical imaging standards, integrated health care, enterprise guidelines, image architecture and design, modality integration, quality control, and environmental hazards. Online instruction using Blackboard incorporates text, video, PowerPoint, and other interactive resources.