

Indiana University School of Medicine
I.U. Graduate School

Medical Dosimetry
Graduate Certificate Program
JRCERT accredited

Student Handbook
2014-2015

Department of Radiation Oncology
IU Simon Cancer Center
535 Barnhill Drive
Indianapolis, IN 46202

Table of Contents

Organizational Chart	3
Mission Statement, Program Goals & Learning Outcomes	4
Program Description	5
Application/Admission Requirements	5
Policies and Procedures	6
Expectations for Students	
Academic Calendar	p.6
Attendance	p.6
Dress Code	p.7
Student Research / Travel Policy	p.7
Code of Ethics	p.8
Grading Policies	p.8
Graduation Requirements	p.9
Transportation & Housing	p.9
Tuition & Finance	p.9
Transfer of Credits	p.9
Health & Safety	10
Health Insurance & Immunizations	p.10
Student Health Locations	p.10
Student Injury/Treatment	p.10
Communicable Disease	p.10
Substance Abuse	p.11
Counseling Services	p.11
Sexual Harassment	p.11
Radiation Safety & Pregnancy	p.11, 12
IU Health Policies for Students	p.13
Emergency Preparedness, Fire Safety	p.13
Program Policies and Procedures	14
Disabilities/Equal Opportunity	p.14
Due Process / Grievance	p.14
Academic Misconduct	p.14
Confidentiality	p.14
Clinical Education Policies	15
Curriculum & Course Descriptions	16
Clinical Hours / Schedule	19
IUSM Honor Code	20

Medical Dosimetry Graduate Certificate

Organizational Chart

Program Director

Colleen DesRosiers, Ph.D., DABR

Assistant Program Director/Clinical Coordinator

Marvene M. Ewing, CMD

Program Consultant

Indra Das, Ph.D., FAAPM, FACR, FIEPM

Site Coordinators*/Instructors for Affiliates

Indiana University Hospital, Indpls, IN

Marvene M. Ewing, BS, CMD*

Methodist Hospital, Indpls, IN

Kent, John MS*

Veterans Administration Hospital, Indpls, IN

Corn, Jonathan, BS, RT(T), CMD*

IU Health Proton Therapy Center

Bloomington, IN

Ted Hoene, BS, RT(T), CMD*

IU Health Bloomington Hospital

Bloomington, IN

Papiez, Ewa, MS*

Didactic Instructors

DesRosiers, Colleen, Ph.D.

Ewing, Marvene BS, CMD

Physics Staff / Instructors

Allgower, Chris, Ph.D.

Das, Indra Ph.D.

Dittmer, Phil Ph.D.

Fanelli, Leia MS

Frye, Douglas, Ph.D.

Georgiades, Alex, Ph.D.

Hutchins, Karen, MS

Lu, Xiaoyi, MS

Lulu, Bruce, Ph.D.

Mumper, Jeffrey, MS

Wolanski, Mark, Ph.D.

Dosimetry Staff / Instructors

Bartlett, Greg BS, RT(T), CMD

Wilson, Julie BS, RT(R)(T), CMD

Simmons, Joseph. BS, RT(T), CMD

Kestranek, Leigh, BS, RT(T), CMD

Osborne, Gwen, BS, RT(T), CMD

Buchanan, Brent, BS, RT(T), CMD

Thompson, Elizabeth, BS, RT(T), CMD

<http://radonc.medicine.iu.edu/medical-dosimetry-graduate-certificate>

Our Mission, Goals and Program Description

Mission Statement

The mission of the Medical Dosimetry Graduate Certificate Program through the Indiana University (IU) Graduate School is to provide a program of excellence in medical dosimetry that is designed to prepare qualified medical dosimetrists through a wide range of academic and clinical experiences using state of the art techniques for photon, electron and proton beam therapy. It is our goal to improve the care of the public that we serve as well as to provide quality resources to the profession and the community that we serve.

The Medical Dosimetrist

The medical dosimetrist is a member of the radiation oncology team who has knowledge of the overall characteristics and clinical relevance of radiation oncology machines and equipment, is cognizant of procedures commonly used in brachytherapy and has the education and expertise necessary to generate radiation dose distributions and dose calculations in collaboration with the medical physicist and radiation oncologist.

Medical Dosimetry Program Goals

1) The student will be a competent entry level medical dosimetrist.

Learning Outcome: The student will be able to design treatment plans for “textbook” disease cases encountered in radiation therapy.

Learning Outcome: The student will be able to perform standard simulations.

2) The student will demonstrate critical thinking skills.

Learning Outcome: The student will be able to customize treatment plans to address patient specific conditions which disallows standard treatment.

Learning Outcome: The student will be able to evaluate treatment plans for adequacy and optimize if necessary.

Learning Outcome: The student will be able to identify errors in simulation which directly impact treatment planning.

3) The student will model professionalism.

Learning Outcome: The student will demonstrate work ethics.

Learning Outcome: The student will summarize the value of life long learning.

4) The student will demonstrate communication skills.

Learning Outcome: The student will demonstrate oral communication skills.

Learning Outcome: The student will demonstrate written communications skills.

Program Description

The Indiana University Graduate Medical Dosimetry Certificate Program (IUGMDCP) is located on the IU School of Medicine (IUSM) campus at Indiana University Purdue University at Indianapolis (IUPUI). The IUGMDCP is affiliated with the following Radiation Oncology Departments:

- 1) IU Health University Hospital, Simon Cancer Center (IUPUI)
- 2) IU Health Proton Center, Bloomington, IN
- 3) IU Health Methodist Hospital, Indianapolis, IN
- 4) Roudebush VA Medical Center, Indianapolis, IN
- 5) Bloomington Hospital, Bloomington, IN

The student enrolled in the IUGMDCP will work with MDCB certified medical dosimetrists, ABR certified medical physicists and ABR certified radiation oncologists in a combined clinical practicum/didactic setting. The program requires 14 graduate credit hours of clinical practicum (a minimum of 1155 in-clinic hours) as well as 9 didactic graduate credit hours. The program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT) and the curriculum follows the standards set forth by that organization. Upon successful completion of the program, the student will be eligible to sit for the Medical Dosimetry Certification Board Examination.

The ***Standards for an Accredited Educational Program in Medical Dosimetry*** may be accessed from the JRCERT may be found at www.jrcert.org.

Application/Admission Requirements

- ◆ All applicants must be accepted for admission to the IU Graduate School.
- ◆ All applicants must hold a Bachelors degree from an accredited university; a Bachelor's degree in radiation therapy is preferred, but others will be considered if all other requirements are met. A GPA of 3.5 or higher must have been maintained for the radiation therapy courses.
- ◆ Certification through the American Registry of Radiologic Technologists in Radiation Therapy. R.T.(T.)
- ◆ Three (3) professional letters of recommendation, with at least one from a qualified medical dosimetrist or qualified medical physicist.
- ◆ Official (sealed) copies of all transcripts for all post-secondary institutions attended.
- ◆ Completion of undergraduate prerequisite courses (or equivalent):
 - a. College Algebra and Trigonometry and/or Pre-calculus
 - b. Cross-Sectional Anatomy
 - c. Radiation and Cancer Biology (RAON J406)
 - d. While not necessarily a requirement, preference will be given to students who have taken General Physics with a lab.
 - e. Basic knowledge of computer technology.

Application information may be accessed at <http://www.iupui.edu/gradoff/admissions/>

Policies and Procedures for the Student

Expectations for the Student

Academic Calendar

Didactic Calendar: The didactic calendar will follow the schedule for the Indiana University Graduate School and the Indiana University-Purdue University at Indianapolis (IUPUI) for semester and term grading periods. Some adjustments in the schedule may be made by individual instructors and that will be communicated from the instructor to the student in a timely fashion.

Clinical Calendar: Clinical practicum courses will be scheduled through the year similar to a work schedule. The clinical schedule will observe the holidays of July 4th, Labor Day, Thanksgiving Day, Martin Luther King Day and Memorial Day. In addition, each student will have a two week break from clinic throughout the Christmas and New Years holiday season.

Spring and Fall Breaks: The traditional Spring and Fall breaks of the undergraduate school are not observed in this program. However, all students will be given 10 personal days to use at their discretion during the year. These days should accommodate your personal time off, sick days and job interviews. Extended absences due to illness will be treated on a case by case basis in consultation with the program director and the curriculum coordinator. All competencies must be completed successfully, regardless of the scheduled time off.



Attendance Policy

Students are expected to attend all didactic lectures as scheduled. If an emergency occurs you are responsible to contact the instructor of the course and also responsible for any course work missed during your absence. If you have scheduled time off, you must have it approved by the instructor of each course you will miss.

The number of clinical practicum hours will vary for each term and semester. Refer to the curriculum and course schedule located on pages 15-18 of this document.

The student is expected to be in clinic, just as an employee is at his/her job and should arrive early or on time. We recognize that emergencies such as illness, family emergency or weather emergency may occur. If such an emergency occurs it will be the responsibility of the student to contact their clinical supervisor to confirm the absence. All didactic and clinical assignments are required to be completed and make up hours for these absences *may be* required at the discretion of the clinical supervisor. All unscheduled absences should be reported to the program clinical coordinator.

All personal time off must be pre-approved by the program clinical coordinator.

Dress Code & Professional Appearance

All students should look professional and neat. Business casual is appropriate attire. Because the dosimetry classroom is located in the clinic area, shorts are not allowed either on clinic or classroom days. Denim may be worn on days of didactic only, but is not allowed on clinical days, following the dress code of all IU Health facilities. Clothes should be free of wrinkles, soil, stains, odors, and missing buttons.

- ▶ A student picture ID nametag must be worn at all times unless working in a sterile environment. It must be worn so that it is easily read and the picture is visible. The student will be responsible for replacing the nametag immediately if it is lost. A lab coat should always be worn when the student is involved in direct patient care.
- ▶ The student must wear a radiation monitoring device while in any program activity that involves ionizing radiation. Students not wearing a radiation monitoring device while in an ionizing radiation rotation will not be allowed to remain in clinic and will be recorded as absent.
- ▶ All students are required to be clean and maintain appropriate personal hygiene with regard to their body, hair, and nails. Hair and nails need to be clean and neat and must not interfere with student or patient safety. Unpleasant body and mouth odors must be attended to. Beards or moustaches must be neatly trimmed and groomed.
- ▶ Jewelry must not interfere with the student's or patient's safety or the ability of the student to participate in clinical activities. No facial, lip or tongue jewelry will be permitted while engaged in clinical activities.
- ▶ The following attire is not permissible for any student while on a clinical rotation: clog-type shoes, leather tennis shoes that have colored decorations, blue jeans, stretch knit or athletic sweat shirt or pants, bare back, bare midriff, off the shoulder or low neckline tops of any kind, body hugging clothing, shorts, sunglasses (without medical reason), head coverings (except as required professionally or for religious reasons), clothing with pictures/writing that is nonprofessional, distasteful, suggestive or illegal in its statement or implication.

Dosimetry Student Research & Travel Policy

Any student who wishes to submit their research for possible oral presentation or a poster session to the AAMD, AAPM or ASTRO national annual meetings must obtain pre-approval from the program director prior to the submission if they wish to be considered for department funding. If the project is accepted there may be some limited funding available for travel reimbursement, depending on existing funds available. Only costs incurred and submitted to the department at least 1 month prior to graduation will be considered for reimbursement.



Code of Ethics and Appropriate Behavior

1. A student must not use or attempt to use unauthorized assistance, materials, information, or study aids in any academic exercise.
2. 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. 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 an 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. A student must not steal, change, destroy or impede another student's work. 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.

The IUPUI Code of Conduct may be found at:

<http://www.iupui.edu/~code/code/rights/index.shtml>

Grading Scale

The Indiana University Graduate School has adopted grading scale criteria. The program will follow that same criteria for didactic courses. The following grading scales will be used for didactic and clinical courses.

Didactic Grading Scale		Clinical Practicum Grading Scale	
Letter Grade	Percentage	Assessment Criteria	Percentage
A	93 -100	Excellent performance	90 - 100%
A-	90 – 92.99	Meets requirements	80 - 89.99%
B+	87 – 89.99	Needs to Improve	75 – 79.99
B	82 – 86.99	Failing	< 75%
B-	79 – 81.99	A failure will result in probationary status and more than one failure may result in dismissal from the program.	
C+	75 – 78.99		
F	not passing		

Graduation Requirements

In order to receive the Medical Dosimetry Graduate Certificate the candidate must:

1. Be accepted into the program and to the IU Graduate School.
2. Complete all required didactic course work with a grade of 80% or higher.
3. Successfully complete all clinical practicum assignments with passing scores on the clinical competency evaluations.
4. Have no outstanding financial commitments to the university.
5. Be recommended for the Certificate to the graduate school by the Program Director and approved by the Associate Dean of the University Graduate School.
6. All course work will be completed within the 12 month duration of the program unless an exception is granted by the Program Director and Educational Coordinator.
7. Meet all the requirements of the Indiana University Graduate School, including:
 - a. graduate school form for certificate completed @ www.iupui.edu/~gradoff/admissions/
 - b. no outstanding fees and payments to the university
 - c. may not be on academic probation
 - d. all official transcripts received by the graduate office
 - e. no disciplinary actions against the student
 - f. paperwork for international students completed
 - g. no other outstanding problems as designated by the graduate school.

Transportation and Housing

All students will be required to provide their own transportation to and from the clinical sites. Clinical sites will be located in Indianapolis and Bloomington, both located in Indiana. Any necessary housing arrangements are up to the student.

Tuition and Finance

Tuition is set by the Indiana University Graduate School and the Medical Dosimetry Graduate Certificate Program. For the year 2013-2014, the tuition is \$10,000 for the twelve month program, including didactic and clinical. The tuition refund policy of the university are established through the office of the bursar.

More information about tuition and finance may be found at:

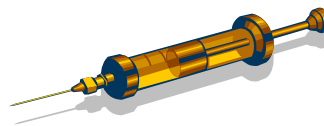
<http://www.bursar.iupui.edu>

Transfer of Credits

Transfer of credits for required pre-requisite courses are established by the university and may be accessed at:

<http://www.enroll.iupui.edu/admissions/undergraduate/transfer/>

Health and Safety Policies



Health Insurance & Immunization Policy

All entering students are required to document their immunization history and provide proof of health insurance. They are ineligible to participate in clinical education activities while non-compliant. Health related documents will be provided to the student at the time of acceptance into the program and will include:

- IUSM Honor Code Document
- IUSM Health Professions Requirement to Disclose
- Health Screening Form
- List of Required Immunizations
- Student Health Insurance Identification

All health related documents are maintained by and compliance is managed by Student/Employee Health. More information about Student/Employee Health can be found at:

<http://www.studentaffairs.iupui.edu/health-wellness/index.shtml>

IUPUI Student Health Locations

Campus Center Student Health (Campus Center)	317-274-2274
Campus Health (Coleman Hall)	317-274-8214

Student Injuries and Treatment

If a student is injured during an educational activity the injury must be reported. If on IU property an IU incident report must be filed. If at an affiliated hospital that hospital's reporting process should be used. Copies of all reports are to be filed in the student's program folder. If treatment of the injury is required the student should go to SEHS if on campus or to the emergency room of the hospital. **STUDENTS ARE RESPONSIBLE FOR THE COST OF THE TREATMENT.**

Policy on Communicable Disease Exposure

Students entering the program must complete the immunizations required by the School of Medicine for all entering students. Chickenpox, which has not previously been on the list for required immunizations, is on the rise in many hospitals. A student who has not had chickenpox and has not been immunized runs the risk of contracting the disease. A student who contracts chickenpox will be excluded from clinical activity for the incubation period of the disease (12 days).

When exposed to a communicable disease, the student must abide by the hospital policies regarding continued patient contact during the incubation period for the disease. If a student misses a significant amount of clinical time during the incubation period, no absence

grade reductions will be made provided the student can meet the minimum clinical competencies required in the course. A student who does not meet minimum competencies will be given additional clinical rotations to equal the time missed to allow completion of the program. It should be noted, however, that the student may not be able to earn higher than the minimum number of competencies in these situations due to the extended absence.

Policy for Substance Abuse

The program upholds the IUPUI campus policy for substance abuse. A complete list of both the state laws and IUPUI policies can be found at:

<http://studentaffairs.iupui.edu/health-wellness/>

Counseling Services

Counseling services are available to students through the student health services. The complete list of available services can be found at:

<http://studentaffairs.iupui.edu/health-wellness/>

Policy for Sexual Harassment

The IUPUI campus policy for sexual harassment may be found @:

<http://www.iupui.edu/~oeo/policy/>

Radiation Safety Statement

Students are responsible for wearing a current radiation monitoring device as a student medical dosimetrist when working in ionizing radiation areas. Students not wearing a current monitoring device will not be allowed to remain in the clinic. Students are responsible for replacement costs of lost radiation monitoring devices and holders and for any delinquency fees assessed by the Radiation Safety Office due to failure to exchange the radiation monitoring device in a timely manner. Students are required to exchange their monitor devices in the manner prescribed by the Radiation Safety Office.

Policy for Excessive Dose of Radiation

Students working in the clinic are expected to observe the radiation safety policies that are in place for the employees of that institution. Any incident that may occur where published acceptable dose limits are exceeded will be handled in the same manner as incidents involving the institutions employees. The incident will be investigated by the radiation safety office and a report filed. Students may request to see their radiation safety report history at any time, either from the Radiation Safety Office (317-274-4974) or from the Program Director. Current radiation exposure results are posted in the Department of Radiation Oncology and Indiana University Hospital.

Declaration of Pregnant Worker / Student Requirements

The declaration of pregnancy is voluntary and not required. Studies have shown that the risks associated with radiation exposure to the embryo/fetus are greater than those to adults. The NRC has established a regulatory limit of 500 mrem to the embryo/fetus of a “declared pregnant woman”. Information related to the risk of radiation and pregnancy is provided to the student when they apply for a receive a radiation monitoring device. More information is available from the Radiation Safety Office (317-274-4797) or from the Program Director. Current radiation exposure results are posted in the Department of Radiation Oncology at University Hospital in the office of the Assistant Program Director/Education Coordinator (RT079).

While the risk to the medical dosimetry student would be very low, the program personnel will work very closely with the pregnant student to ensure safety for the fetus.

Option #1 – Undeclared Pregnancy Policy

The pregnant student may choose not to declare pregnancy. As indicated above, the declaration of pregnancy by a student is voluntary and not required. In that case, the radiation exposure limits for occupational radiation workers (5,000 mrem or 50 mSv) would apply to both the student and her unborn child.

Option #2 – Declare Pregnancy and Continue in the Program without Modification

The pregnant student may submit a declaration of pregnancy *in writing* and continue through the program without modification. The likelihood that the limits to the fetus would be exceeded is low. The Radiation Safety Office will be monitoring the pregnant student’s monthly exposures closely. If any unusual exposures are noted in a given month or if the cumulative exposure approaches 50% of the 500 mrem limit, the RSO and/or the Medical Dosimetry Program Director will meet with the student to discuss possible causes of the elevated exposures and any additional precautions that would need to be observed.

A written declaration of pregnancy may be withdrawn, *in writing*, by the student at any time.

Option #3 – Requesting Temporary Leave or Withdrawal

The student also has an option to submit a written request for a temporary leave or withdrawal from the program. If a temporary leave is granted, all course requirements must be met for successful completion of the Medical Dosimetry Graduate Certificate Program. All requests will be considered by the program advisory committee, including both the Program Director and Education Coordinator. Requests will be considered on a case by case basis and could result in the student being asked to withdraw from the program if they were unable to complete all course requirements.

The On-Line Manual for Radiation Safety may be accessed @:

<http://researchadmin.iu.edu/Radsafety/IUPUI/manual/manual-e-2.html>

Policy on Performance of Related Work

Students employed by any of the clinical education settings may not engage in that employment during scheduled clinical experience. Likewise, related work performed by the student as a hospital employee may not be substituted for educational clinical experience.

Policies for Indiana University Health Employees and Students

The hospital policies and procedures for employees and students may be found on the Pulse Page for Indiana University Health:

<http://pulse.iuhealth.org/portal/intranet/PoliciesAndProcedures>

Policy for Emergency Preparedness: Management and Continuity

The IUPUI campus emergency preparedness handbook contains procedures for specific emergency conditions, including:

Active Shooter	Bomb Threat
Earthquake	Evacuation
Fire	Medical Emergency
Pandemic Influenza	Severe Weather
Shelter	Spills, Gas Leaks, Odors
Utility Failure	

The handbook may be accessed at: www.iupui.edu/~prepared/procedures/

Fire Safety Policy (fire plan IU Hospital)

The student has been made familiar with the Fire Plan policy G1-114 from the IU Radiation Oncology department manual. The Fire Plan is based on the acronym RACE.

R – Rescue. . . anyone in immediate danger

A – Activate. . know the location of fire extinguishers and pull stations.
pull alarm and call the fire emergency number 944-2311.

C – Contain. . .contain fire by closing doors to appropriate fire zones, if possible

E – Evacuate . if fire cannot be put out, evacuate into the two fire zone areas

- 1) Front Zone evacuates into University Hospital to cafeteria
- 2) Back Zone evacuates into the front, if possible, or through the back stairwell by the Gamma Knife.

Program Policies and Procedures

Americans with Disabilities Act & Equal Opportunity Policy

We are committed to providing equal educational and employment opportunity for all. Indiana University, the IU School of Medicine and the IU Graduate School do not discriminate on the basis of race, color, religion, age, ancestry or national origin, sex, sexual orientation, handicap, marital status and veteran status. All employment policies and activities are consistent with federal and state laws.

If you need any special accommodations due to a disability, please contact Adaptive Educational Services at (317) 274-3241.

Procedure for Due Process / Grievance

IUPUI has developed guidelines and procedures to address situations when a student believes that his or her rights as defined in the IUPUI Code of Student Rights, Responsibilities and Conduct (Student Code) have been violated by a member of the university faculty, staff or administration.

The IUPUI policy in its entirety may be obtained on line at:

<http://www.iupui.edu/~code/code/rights/index.shtml>

The grievance policy of the IU Graduate School may be found at:

<http://www.iu.edu/~code/bloomington/complaints/index.shtml>

Students of the IUSM also have access to the Teacher Learner Advocacy Committee.

For more information, see:

K:/Teachin-Education\Dosimetry School\Student Handbook\TLAC brochure.

Students may also access the grievance policies and procedures of the JRCERT at:

www.jrcert.org

Disciplinary Actions

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

Behavioral misconduct will be discussed with the Program Director and if necessary with the Chief of Physics and the Chairman of the Radiation Therapy Department.

<http://studentaffairs.iupui.edu/student-rights/student-code/index.shtml>

Confidentiality

Student records will be maintained confidentially. An instructor will not discuss student academic records or behavior with another student or the public. Discussions with coworkers will be limited only to those necessary for the integrity of the program.

Clinical Education Policies

Clinical education provides the student with the opportunity to combine the knowledge of theory and the application of these principles in competent and compassionate patient care. In the Medical Dosimetry Graduate Certificate Program clinic education is part of the total curriculum and is divided into two categories.

◆**Clinical Instruction:** Laboratory instruction in simulated clinic settings with faculty demonstration and supervised performance by students.

◆**Clinical Practicum:** Regularly scheduled assignments in the patient care setting for the purpose of acquiring the necessary level of confidence, consistency and competency of clinical performance.

The department has established policies on clinic education to promote organization and consistency in the clinic education of students within the program. These policies also ensure the clinic education complies with the programmatic accreditation standards of the JRCERT.

◆Clinical Supervision

At no time is a student permitted to perform in the simulation laboratory or a clinic setting without supervision by faculty or certified practitioners serving as clinical instructors for the program. Though students must perform independently when the level of proficiency calls for this experience; on-site or side-by-side supervision is always required. Clinical supervision policies in each program are in compliance with respective programmatic accreditation standards of the JRCERT.

If a student is certified in another medical imaging / radiation sciences modality, he or she may not act as an employee or be substituted as an employee of the facility under any circumstances during regularly scheduled clinical/practicum time.

◆Clinical Procedures Handbook

A Clinical Procedures Handbook is provided annually to each student as well as to each clinical preceptor. The handbook includes the job description and expectations of the clinical preceptor and all clinical instructors, clinical practicum policies for students and a Treatment Planning Checklist for Medical Dosimetry Students.

Curriculum and Course Schedule

Twelve Month Curriculum and Schedule

First Term Summer Session II June 2014 – Aug 2014

RAON D601

Concepts for Preparation and Planning in Medical Dosimetry I

2 credits

Instructor – Marvene Ewing, CMD

This course is a didactic/lab introduction to the skills and technologies needed to pursue a career in medical dosimetry. It is designed for the student who has already completed a program in Radiation Therapy Technology and will give the student background information on both the professional and technological side.

Professional Relations / Responsibilities; Radiation Protection; Computer Technology/Networking; Applied Mathematics for Dosimetry; Monitor Unit Calculations; Cancer Patient Management; Medical Imaging/Anatomy/Contouring.

RAON D604

Medical Physics for Radiation Oncology I

1 credit

Instructor – Colleen DesRosiers, Ph.D., et.al.

Medical Physics I is the first of two sections and will cover topics that provide the basis for the field of medical physics and the production of radiation.

Structure of Matter; Nuclear Transformations; Production of x-rays; Clinical Radiation Generators; Interactions of Ionizing Radiation.

RAON D606

Clinical Practicum I General Dosimetry

1 credit

Coordinator – Marvene Ewing, CMD with Clinical Site Supervisors

This clinical experience is intended to give the student a general overview of clinical activities. The student will observe and assist with day to day activities from the preparation of the patient for treatments through the planning process. Meeting established competency levels is required.

Introduction to the Treatment Planning System and Tools; Orientation to the Departmental Patient Flow and EMR; Positioning and Immobilization; Data Acquisition and Transfer; Basic Planning Techniques and Plan Evaluation.

Second Term Fall Semester August 2014 – December 2014

RAON D602

Concepts for Preparation and Planning in Medical Dosimetry II

1 credit

Instructor – Marvene Ewing, CMD

The didactic/lab course is intended to give the student a thorough understanding of treatment planning considerations for the patient. It addresses conventional planning as well as newer planning technologies, including IMRT and SBRT. The course is interactive, with a combination of lecture and hands-on computer activities.

CT & Simulation; Conventional 2D and 3D Planning; IMRT Planning; SBRT Planning; Dose Volume Histogram Evaluation, EMR

RAON D605

Medical Physics for Radiation Oncology II

2 credits

Instructor – Colleen DesRosiers, Ph.D., et. al.

The second part of the medical physics course addresses the physics considerations for measurement of absorbed dose, dose distributions, dosimetric calculations, treatment planning topics as well as quality assurance from the physicist point of view.

Measurement of Ionizing Radiation; Quality of X-ray Beams; Measurement of Absorbed Dose; Dose Distribution and Scatter Analysis; Systems of Dosimetric Calculations; Isodose Distributions; Treatment Planning; Electron Beam Therapy; Brachytherapy; Quality Assurance; 3D / IMRT Planning; TBI Irradiation; Monte Carlo Introduction; Stereotactic Radiosurgery

RAON D603

Clinical Oncology and Dosimetric Considerations

1 credit

Coordinator – Marvene M. Ewing, CMD with guest lecturers

The class is comprised of a series of lectures to discuss the medical and dosimetric issues for different anatomic sites. The class will be coordinated by the instructor and may include lectures by invited oncology lecturers who specialize in the treatment of specific anatomic sites.

Site Specific – Anatomy, Pathology, Lymphatic Drainage; Physiology; Dosimetric Considerations for each site – Treatment Techniques and Beam Arrangements; Simulations; Dose Calculation Considerations; Critical Organs and Limiting Dose Factors; Positioning and Immobilization; Age Specific Considerations.

RAON D607

Clinical Practicum II – Intermediate Planning in Medical Dosimetry

4 credits

Instructor – Marvene Ewing, CMD with clinical site supervisors

Clinical rotations at various clinical sites will provide a board experience in 2D, 3D and IMRT planning as well as experience with brachytherapy planning and physics quality assurance tasks. Demonstration of competency will be required.

Planning for specific anatomical sites and techniques; IMRT Planning, SBRT Planning; Brachytherapy Planning; Intro to Proton Planning; Clinical Physics; Quality Assurance

Third Term Spring Semester Jan. 2015 – May, 2015

RAON D701

Independent Study / Research in Radiation Oncology

2 credits

Coordinator – Colleen DesRosiers, Ph.D.; Indra Das, Ph.D.

Advisor – Clinical Faculty as assigned.

The course consists of focused, independent planning for assigned complex cases. The resulting plans will be presented in a Peer Review type format where they will be evaluated and critiqued by a panel of medical dosimetrists, medical physicists and other students. Each student will also present one in-depth case presentation following the prescribed written format of the AAMD Student Writing Competition

RAON D703

Clinical Practicum III – Advanced Topics in Medical Dosimetry

6 credits

Instructor – Marvene Ewing, CMD with clinical site supervisors

The student will participate in and demonstrate competency for complex IMRT Planning, SBRT Planning, and Proton Planning and Brachytherapy Planning.

Complex Planning for IMRT, SBRT, Proton, Brachytherapy; Clinical Physics and Quality Assurance.

Fourth Term Summer Session I May 2015 – June 2015

RAON D704

Clinical Practicum IV Assessment Challenges in Medical Dosimetry

3 credits

Instructor – Marvene Ewing, CMD; et al.

Assessment challenges will be assigned to each student that will allow the student along with the instructor, to assess their skills in performing plans from the beginning to the end. Communication with the physician about the imaging needs and prescription as well as all aspects of the plan itself will be part of the assessment package.

Challenges assigned include: Complex 2D plan, IMRT, SBRT, and Brachytherapy.

**Medical Dosimetry Graduate Certificate Program
Clinical Scheduled Hours
2014-2015**

Clinical Practicum I	1 credit hour summer session	(95 hr / credit hr)
8:00 – 4:00	7 hrs x 13 sessions	91hours
12:00-4:00	4 hrs x 1 session	<u>4 hours</u>
		95.0 total clinic hours
Clinical Practicum II	4 credit hours fall semester	(90 hr / credit hr)
8:00 – 4:30	7.5 hrs x 36 sessions	270 hours (*37 sessions 2014)
8:00 – 3:00	6 hrs x 15 sessions	<u>90</u>
		360 total clinic hours
Clinical Practicum III	6 credit hrs spring semester	(90 hr / credit hr)
8:00 – 4:30	7.5 hours x 72 sessions	<u>540 hours</u> (*71 sessions 2015)
		540 total clinic hours
Clinical Practicum IV	3 credit hours summer session	(70 hr / credit hr)
8:00 – 4:30	7.5 hrs x 28 sessions	<u>210 hours</u>
		210 total clinic hours

*The scheduling for terms this year resulted in one extra clinic day during the fall semester, and less clinic day in the spring semester for the same total hours. The number of clinic hours per credit hour remains within the range set by the graduate school.

Total scheduled clinic hours = 1205 hours.*

**Each student will be allowed a total of 10 vacation/personal days over the 12 month period. These days are to be used for sick time, personal business, job interviews, or other time off at your discretion. They are in lieu of the traditional Fall and Spring Break time off. Assuming 20 hours of clinic time used during first 6 months and 30 hours clinic time used during second 6 month period; a balance of 1155 minimum clinic hours should be worked (82.5 hours per credit hour).*

See the calendar (Appendix) for actual scheduled dates for each term. Each student will need approval from the curriculum coordinator or the program director for their scheduled time off.



620 Union Drive Indianapolis, IN 46202

IUSM Honor Code

Embarking on a career in the life sciences and health care professions means accepting the responsibilities and unique privileges of these professions. These include self-monitoring and self-governance, and the responsibilities for these professional duties begin the moment that an individual starts medical school or graduate school. I understand that it is a great honor and privilege to study and work in the health care profession. As a member of the Indiana University School of Medicine community, I promise to uphold the highest standards of ethical and compassionate behavior while learning, caring for others, performing research, and/or participating in educational activities. I do so according to the following tenets that will guide me through my career. I will strive to uphold the spirit and the letter of this code during my years at Indiana University School of Medicine and throughout my career in the health professions.

Honesty

- I will maintain the highest standards of honesty.
- If engaged in research, I will conduct these activities in an unbiased manner, report the results truthfully, and give credit for ideas developed and worked on by others.
- If engaged in patient care, I will be considerate and truthful, and will accurately report all historical and physical findings, test results, and other pertinent information.

Integrity

- I will conduct myself professionally.
- I will take responsibility for what I say and do.
- I will recognize my own limitations and will seek help when appropriate.

Respect

- I will respect the dignity of others, treating them with civility and understanding.
- I will contribute to creating a safe and supportive atmosphere for teaching and learning.
- I will regard privacy and confidentiality as core obligations.
- I will not tolerate discrimination.

The School of Medicine Promise

Indiana University School of Medicine promises to create a professional environment that fosters excellence, abhors intolerance, and values each individual's unique contribution to its learning community.

Last Modified: September 19, 2005
[Copyright 2005](#), Indiana University Board of Trustees
[Privacy Statement](#) - [Medical Disclaimer](#)