Department of Imaging Physics

Computed Tomography Hands-On Workshop for Physicists

January 23-25, 2015
Houston, TX

Class limited to 36 attendees.

Tuition: $1500

16 Hours (3 days): 9.0 hours of Classroom Lectures; 7.0 hours of Laboratories
Registration will begin at 1:00 PM on Friday, and classes will finish at 12:15 PM on Sunday.

Course Directors: John Rong, PhD and S. Cheenu Kappadath, PhD

Other Instructors: Dianna Cody, PhD, Dustin Gress, MS, Sastry Vedam, PhD, and Lifeng Yu, PhD

Course Description: This course will provide the practicing medical physicist with an overview of CT physics, QC/QA, and ACR CT accreditation process. With increasing concerns regarding radiation dose, CT dose reduction strategies will be discussed. The lectures and labs are designed to convey information on physics, testing, and accreditation in routine clinical practice. Participants will also have opportunity to learn about dual-energy imaging, iterative reconstruction techniques, and gain experience on CT simulator for Radiation treatment planning. The labs will be conducted on 6 different modern CT scanners including a GE dual-energy 64-channel unit, a Siemens dual-energy 128-channel unit and a Philips 64-channel unit.

Course Objectives: Upon completion of the workshop activities, a participant will have gained necessary knowledge to: measure radiation dose for CT scanners, perform physics tests for ACR CT accreditation, utilize scanner features for CT dose reduction, identify typical CT image artifacts, become familiar to the physics testing for CT QC/QA, and understand the process of CT for radiation treatment Planning.

LECTURE TOPICS:
1) Overview of CT
2) CT Dose
3) ACR CT Accreditation Program
4) CT for Radiation Treatment Planning
5) Emerging CT Technologies
6) CT QC & QA
7) CT Image Artifacts

LAB 1: ACR CT Accreditation – Phantom Images
ACR phantom scans
Image analysis
Preparation of images and data forms

LAB 2: ACR CT Accreditation - Dose
ACR CT dose measurements
Limitations of CTDI method
Other techniques for CT dose measurements

LAB 3: Factors Affecting CT Image Quality
Scan parameters
Post-processing parameters
Detector/data channel configurations

LAB 4: CT Dose Reduction Techniques
Factors affecting dose modulation
Effect of kVp, detector configuration, and reconstructions
Special techniques and dose-saving features

LAB 5: Applications of Dual Energy CT
Preset GSI protocol options
Non-GSI HD mode for Hi-Resolution Imaging
Other Features of Spectral Imaging

LAB 6: CT for Radiation Treatment Planning
CT number to electron density conversion/calibration
3D CT virtual simulation for radiotherapy planning

This program would be appropriate for medical physicists who support multi-slice CT in a clinical environment. Technically-oriented technologists and radiologists may also find this information and experience beneficial to their clinical practices or career development.
COURSE DIRECTORS

John Rong, PhD, is an Associate Professor of Imaging Physics in the Department of Imaging Physics at The University of Texas MD Anderson Cancer Center. He has extensive clinical experience in CT physics.

S. Cheenu Kappadath, PhD, is an Associate Professor in the Department of Imaging Physics at The University of Texas MD Anderson Cancer Center. He has extensive clinical experience in CT physics.

CONTINUING EDUCATION CREDITS

Application has been submitted to the Commission on Accreditation of Medical Physics Education Programs, Inc. (CAMPEP) requesting up to sixteen (16) MPCEC credits for full participation in the course.

SPECIAL NEEDS

Individuals needing auxiliary aids or services as identified in the Americans with Disabilities Act should contact us.

CANCELLATION POLICY

The University of Texas MD Anderson Cancer Center reserves the right to cancel any course no less than one week prior to the course. Should circumstances make this necessary; fees will be refunded in full.

If registration must be cancelled by the applicant, notice must be received at least 21 days prior to the commencement of the course. Tuition will be refunded (less a $100 handling fee). Later cancellation will incur retention of 50% of the tuition unless the applicant’s place can be filled from a waiting list. In this case, the full tuition will be refunded (less the $100 handling fee). Once the course commences there will be no refund.

APPLICATIONS AND QUESTIONS

Applications and questions should be directed to the Short Course Coordinator at the address, telephone, fax, or e-mail below:

Attention: Elizabeth Kindred
Short Course Coordinator
The University of Texas Phone: (713) 563-2548
MD Anderson Cancer Center Fax: (713) 563-2480
Dept. of Imaging Physics - Unit 1472 E-mail: eckindre@mdanderson.org
1400 Pressler Street
Houston, Texas 77030

Information regarding local accommodations and transportation will be sent upon receipt of the application and course fee.

The class size is limited to the first 36 applicants.

Application Form (return to Short Course Coordinator at the address above)

MD Anderson CT Hands-On Workshop for Physicists
January 23-25, 2015

Please type or print:

Name __________________________________________ Institution ____________________________
Position __________________________________________
City, State, Zip __________________________________________
E-Mail Address __________________________________________ Fax Number ____________________

Educational Background (List degree, year, field, and school)

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Checks should be made payable to: The University of Texas MD Anderson Cancer Center