

Course specification

RARD 633: Clinical Nuclear Medicine

Institute Name: Mahidol University

Campus/Faculty/Department: Faculty of Medicine Ramathibodi Hospital, Department of Diagnostic and Therapeutic Radiology

Section 1: General information

1. Course number and name

Course number: RARD 633

Course name: Clinical Nuclear Medicine

2. Credits: 2 (2-0-4)

3. Curriculum and type of course

3.1 Curriculum: Clinical Nuclear Medicine

3.2 Type of course: Required course

4. Instructors

4.1 Course Coordinator: Lect. Dr.PutthipornCharoenphun

4.2 Instructors:

Lect. Dr.PutthipornCharoenphun (PC)

Lect. Dr.KrisanatChuamsaamarkkee (KC)

Medical Doctor staff (MD)

5. Semester/Year: 1st semester, 2nd year student

6. Pre-requisite: RARD 526 Physics of Nuclear Medicine

RARD 528 Basic and Radiological Imaging of Anatomy and Physiology

7. Co-requisite: None

8. Classroom: To be announced

9. Revision Date: 20th November 2019 By: Committee

Section 2: Purpose and Objective

1. Course Learning Outcome

- 1.1 Be able to understand basic concepts and demonstrate the knowledge of clinical nuclear medicine for both diagnostic (using imaging and non-imaging procedures) and therapeutic.
- 1.2 Be able to survey up-to-date scientific information in the literature in the field of clinical nuclear medicine.
- 1.3 Be able to effectively present and communicate the knowledge of medical physics in nuclear medicine to improve clinical nuclear medicine service.

Section 3: Course details

1. Course description

Basic concepts and the knowledge of clinical nuclear medicine, nuclear cardiology, pulmonary system, central nervous system, gastrointestinal system, genitourinary system, skeletal system, lymphatic, vascular system, endocrine system, tumour imaging, inflammation, radionuclide therapy in NM, Non-imaging procedures in NM, role of Nuclear Medicine physicist in clinical NM service diagnostic, therapeutic, non-imaging and dosimetry.

2. Hours per semester: Lecture 25 hours

Section 4: Course Learning Outcomes

Course level learning outcomes	Programme level learning outcomes	Methods	Assessment
1. Understand basic concepts and demonstrate the knowledge of clinical nuclear medicine for both diagnostic (using imaging and non-imaging procedures) and therapeutic	ELO 2	- Lecture	- Paper examination
2. Survey up-to-date scientific information in the literature in the field of clinical nuclear medicine	ELOs 2, 5	- Presentation	- Rubric presentation
3. Effectively present and communicate the knowledge of medical physics in nuclear medicine to improve clinical nuclear medicine service	ELOs 2, 3, 4, 5	- Presentation	- Rubric presentation

Section 5: Lesson plan and assessment

1. Lesson plan

Time	Topic	Instructor	Method	Assessment
2 h	Nuclear cardiology and pulmonary system	MD	- Lecture	- Paper examination
2 h	Central nervous system and gastrointestinal system	MD	- Lecture	- Paper examination
2 h	Genitourinary system	MD	- Lecture	- Paper examination
2 h	Skeletal system, lymphatic and vascular system	MD	- Lecture	- Paper examination
2 h	Endocrine system	MD	- Lecture	- Paper examination
2 h	Tumour imaging and inflammation	MD	- Lecture	- Paper examination
2 h	Radionuclide therapy in Nuclear Medicine	PC	- Lecture - Group discussion	- Paper examination - Q&A
2 h	Non-imaging procedures in Nuclear Medicine	PC	- Lecture - Group discussion	- Paper examination - Q&A
3 h	Role of Nuclear Medicine physicist in clinical NM service (diagnostic)	PC/ KC	- Presentation - Group discussion	- Rubric presentation
3 h	Role of Nuclear Medicine physicist in clinical NM service (therapeutic)	PC/ KC	- Presentation - Group discussion	- Rubric presentation
3 h	Role of Nuclear Medicine physicist to clinical NM service	PC/ KC	- Presentation - Group discussion	- Rubric presentation

2. Measurement and evaluation of student achievement
 - 2.1 Paper examination 70%
 - 2.2 Presentation 30%

Section 6: Assessment and improvement of the course operation

1. Strategy to assess the effectiveness of the course by the students
 - Assessment of the course by student
2. Strategy to assess the instruction
 - Assessment of student's learning records
 - Assessment of instructor's teaching by student
3. Improvement of instruction
 - Consider the students' learning records
 - Consider the students' assessment of instructor's teaching
 - Consider the program committee's comment
4. Verification of student achievement in the subject
 - By program committee and faculty-level academic committee
5. Review and action plan to improve the effectiveness of the course
 - Using the results from 1-4 as inputs to the instruction improvement