

## Course specification

### RARD 698: Thesis

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 698

Course name: Thesis

2. Credit: 12 (0-36-0)

3. Curriculum and type of course

3.1 Curriculum: Thesis

3.2 Type of course: Thesis

4. Instructors

4.1 Course Coordinator: Lecturer team

4.2 Instructors:

Asst. Prof. Dr. Sawwanee Asavaphatiboon

Lect. Dr. Puangpen Tangboonduangjit

Lect. Dr. Krisanat Chuamsaamarkkee

Lect. Dr. Putthiporn Charoenphun

5. Semester/Year: 2<sup>nd</sup> Semester, 2<sup>nd</sup> year student

6. Pre-requisite: RARD 589 Medical Physics Seminar

RARD 588 Research Methodology

7. Co-requisite: None

8. Classroom: None

9. Revision Date: 20<sup>th</sup> November 2019 By: Committee

## Section 2: Purpose and Objective

1. Course Learning Outcome
  - 1.1 Be able to develop research proposal applying research method
  - 1.2 Be able to present research proposal to thesis committee.
  - 1.3 Be able to conduct research of medical physics with ethical awareness.
  - 1.4 Be able to manage and communicate with research team.
  - 1.5 Be able to collect, analyse and interpret research data and outcome.
  - 1.6 Be able to present and pass the thesis defense.
  - 1.7 Be able to publish research finding as a journal or conference proceeding.

## Section 3: Course details

### 1. Course Description

Research of medical physics in diagnostic radiology, radiotherapy, and nuclear medicine, ethics of conducting, presenting, and publishing research.

2. Hours per semester: -

## Section 4: Course Learning Outcomes

<b>Course level learning outcomes</b>	<b>Programme level learning outcomes</b>	<b>Methods</b>	<b>Assessment</b>
1. Develop research proposal applying research method	ELOs 1, 2, 3, 5	- Presentation - Team meeting and discussion - Writing proposal	- Face to face feedback and suggestion - Written comments - Progression report
2. Present research proposal to thesis committee	ELOs 2, 3, 5	- Writing proposal - Presentation - Defend proposal	- Rubric presentation - Face to face feedback and suggestion
3. Conduct research of medical physics with ethical awareness	ELOs 1, 2, 3, 4, 6	- Apply for ethic committee approval - Team meeting and discussion	- Certificate of ethic committee approval - Face to face feedback and suggestion - Progression report
4. Manage and communicate with research team	ELOs 4, 5	- Team meeting and discussion	- Face to face feedback and suggestion - Progression report

<b>Course level learning outcomes</b>	<b>Programme level learning outcomes</b>	<b>Methods</b>	<b>Assessment</b>
5. Collect, analyse and interpret research data and outcome	ELO 6	- Team meeting and discussion - Thesis writing	- Face to face feedback and suggestion - Written comments - Progression report
6. Present and pass the thesis defense	ELOs 2, 3, 5	- Presentation - Defend thesis	- Rubric presentation - Face to face feedback and suggestion
7. Publish research finding as a journal or conference proceeding	ELO 5	- Manuscript or proceeding writing - Manuscript or proceeding submission	- Written comments - Face to face feedback and suggestion - Approval by advisors

#### Section 5: Lesson plan and assessment

1. Lesson plan: None
2. Measurement and evaluation of student achievement
  - Defend proposal
  - Progression report
  - Defend thesis
  - Publish manuscript or proceeding

#### Section 6: Assessment and improvement of the course operation

1. Strategy to assess the effectiveness of the course by the students
  - None
2. Strategy to assess the instruction
  - None
3. Improvement of instruction
  - Consider the students' thesis progression
  - Consider the students' publication (journal or conference proceeding)
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
  - Discuss about student progression in program committee meeting
  - Progression report every 3 months

#### Learning resources

- Electronic journals
- Electronic database
- Text books and guidelines

