



**Karolinska  
Institutet**

Course syllabus for

## **Oral Radiology 3, 3 credits**

Oral radiologi 3, 3 hp

This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.

Please note that the course syllabus is available in the following versions:

[Autumn2011](#) , [Autumn2014](#) , [Autumn2015](#) , [Autumn2017](#) , [Autumn2018](#) , [Autumn2021](#)

Course code	2TL035
Course name	Oral Radiology 3
Credits	3 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Odontology
Level	AV - Second cycle
Grading scale	Pass, Fail
Department	Department of Dental Medicine
Decided by	Programnämnd 10
Decision date	2011-07-06
Revised by	Education committee DENTMED
Last revision	2018-03-26
Course syllabus valid from	Autumn 2018

## **Specific entry requirements**

For admission to the course, it is required that all courses during semester 1 to 4, as well as the course Klinisk odontologi 3, have been passed.

Students who fail a clinical placement (or equivalent) as a result of demonstrating such a serious lack of knowledge, skills or attitude that patient safety or the patients' confidence in medical care is at risk, will only be qualified for a new clinical placement once the individual action plan has been carried out.

## **Objectives**

### *Knowledge and understanding*

The student should be able to:

- based on a patient's oral and general health status, make an overall assessment of the patient's need for radiography of the teeth and jaw.
- from a scientific perspective, as well as best practice, assess the choice of an appropriate X-ray method in order to answer clinical radiological issues.

- demonstrate an in depth knowledge of and ability to analyse the biological effects of X-ray radiation and evaluate and apply different methods to optimise X-ray dosage in the patient in intraoral and panoramic X-ray imaging.
- evaluate, apply different methods concerning radiation protection and to reduce X-ray dosage to patient, staff and attendants in intraoral and panoramic X-ray imaging.
- assess and evaluate image quality and reflect on its importance for diagnostic radiology.
- apply current regulations from Strålsäkerhetsmyndigheten (The Swedish Radiation Safety Authority) at a radiological examination of a patient, with responsibility for quality management.
- demonstrate knowledge about how men's violence against women and violence in close relations can be noticed in radiological examinations and anamnesis.
- demonstrate knowledge and an understanding of products and materials that are used in radiology in dental care and their impact on the environment.
- demonstrate knowledge of the development of new imaging methods and their applications.
- demonstrate knowledge of the indications for computed tomography (cone beam computed tomography-CBCT) technology and have knowledge of the bases of CBCT technology and what is seen in a three-dimensional image of teeth and jaws.

### *Skill and ability*

The student should be able to:

- independently review and analyse normal anatomic structures and pathological changes in teeth, jaws and surrounding tissues in an intraoral X-ray image and panoramic x-rays, and in a written statement give relevant tentative diagnoses from the radiographic findings.
- assess when a referral needs to be sent to a radiology specialist for an extended examination.
- perform X-ray imaging of teeth and alveolar process with digital intraoral technique and be able to /process the images in a relevant way/ perform relevant imaging/

### *Judgement and approach*

The student should be able to:

- demonstrate clinical maturity with a professional attitude towards patients and colleagues both orally and in writing.
- demonstrate the ability to identify his/her need for additional knowledge and continuous education and skill development.

## **Content**

The course is divided into two modules:

### **Radiographic panorama technology, 1.5 hp**

Grading scale: GU

In this course module radiological panorama technique and advanced education in the properties and biological impact of X-ray radiation is given, as well as radiation protection and radiation protection regulations particularly applicable for panorama technology. Pre-clinical and clinical exercises are carried out for panorama X-ray examinations and exercises in interpretation of normal X-ray anatomy and pathological changes regarding teeth, jaws and facial skeleton in the panoramic X-ray image.

### **Advanced clinical diagnostic radiology, 1.5 hp**

Grading scale: GU

Lectures and seminars are given including evaluation of diagnostic methods, image quality and interpretation of normal anatomy and pathological changes in intraoral and panoramic X-ray images. In connection with each clinical session, discussions concerning selection criteria and indications are

carried out before intraoral and panorama X-ray imaging in the patient. Clinical duty is carried out with intraoral and panorama X-ray examination in patients, with interpretation of normal anatomy and pathological changes in X-ray images from complete radiographic examinations in a written statement.

## Teaching methods

### **Radiographic panorama technology, 1.5 credits**

Lectures, seminars, independent work with web based material (e.g. film, web course, self test), oral presentations (individually and in group).

### **Advanced clinical diagnostic radiology, 1.5 credits**

Lectures, seminars, group exercise, independent work with web based material as well as pre-clinical and clinical training.

Seminars, web course and pre-clinical/clinical training are compulsory.

The course coordinator decides whether, and if so how, absence from compulsory course elements can be made up. Study results cannot be reported until the student has participated in compulsory course elements or compensated for any absence in accordance with instructions from the course coordinator. Absence from a compulsory course element could mean that the student can not retake the element until the next time the course is offered.

## Examination

### **Radiographic panorama technology, 1.5 credits**

- Written examination
- Written assignments

### **Advanced clinical diagnostic radiology, 1.5 credits**

- Written examination
- Written assignments
- Structured practical test

For both modules the following applies:

For a pass grade, attendance at compulsory course elements is also required.

Parallel with Oral Radiology 3 it is possible to carry out panoramic examinations of patients according to a specific protocol. To obtain a certificate for a licence to possess and use the panoramic x-ray equipment with rated voltages that can exceed 75 kilovolts, the student must pass the course with panoramic screening examination and have completed approved panoramic imaging with image interpretation and diagnosis of at least six patients. The implementation of panorama imaging should be completed before finishing the program in semester 10.

### **Limited number of examinations or practical training sessions**

Students who do not pass a regular examination are entitled to re-sit the examination on five more occasions. If the student has failed six examinations/tests, no additional examination is given. Each occasion the student participates in the same test counts as an examination. Submission of a blank exam paper is regarded as an examination. In case a student is registered for an examination but does not attend, this is not regarded as an examination.

### **Interruption of clinical placement**

The examiner may, with immediate effect, interrupt a student's clinical placement (or equivalent) if the student demonstrates such serious deficiencies in knowledge, skills or attitude that patient safety or patient confidence in healthcare is at risk. If a clinical placement is interrupted in this way the student is

deemed to have failed that element and to have used up one clinical placement opportunity. In such cases, an individual action plan should be set up stating which activities and tests are required before the student is qualified for a new clinical placement on the course.

## Transitional provisions

If the course is discontinued or undergoes major changes, examination with the previous literature list and learning outcomes will be offered for no more than one academic year after the implementation of the revision/discontinuation.

## Other directives

A course evaluation is carried out according to the guidelines established by the Board of education.

## Literature and other teaching aids

### Compulsory literature

#### Oral radiology : principles and interpretation

*White, Stuart C.; Pharoah, Michael J.*

7th ed. : St. Louis, Mo. : Mosby/Elsevier, cop. 2014 - xv, 679 p.

ISBN:9780323096331 LIBRIS-ID:15085416

[Library search](#)

### Recommended literature

#### Oral radiologi

*Gröndahl, Hans-Göran; Ekestubbe, Annika; Lilja, Agneta*

3. uppl. : Stockholm : Gothia, 2005 - 102 s.

ISBN:91-7205-475-1 LIBRIS-ID:9976139

[Library search](#)

*Petrén, Ture; Carlsöö, Sven*

#### Anatomi för tandläkarstuderande och tandläkare

[Ny utg.] : Stockholm : Nordiska bokhandelns förlag :b Norstedts akademiska förlag :b [ePan], 2006 - 377, [1] s.

ISBN:91-7297-805-8 LIBRIS-ID:10228789

[Library search](#)

*Whaites, Eric*

#### Essentials of dental radiography and radiology

4. ed. : Edinburgh : Churchill Livingstone, 2007 - 473 s.

ISBN:0-443-10168-X LIBRIS-ID:10371710

[Library search](#)

Strålsäkerhetsmyndigheten:

[www.stralsakerhetsmyndigheten.se](http://www.stralsakerhetsmyndigheten.se)