



**Karolinska
Institutet**

Course syllabus for

Clinical course in orthodontics - craniofacial growth and development, 15 credits

Klinisk kurs i ortodonti - kraniofacial växt och utveckling, 15 hp

This course syllabus is valid from autumn 2011.

Course code	9OF005
Course name	Clinical course in orthodontics - craniofacial growth and development
Credits	15 credits
Form of Education	Contract education (credits)
Main field of study	Odontology
Level	AV - Second cycle
Grading scale	Pass, Fail
Department	Department of Dental Medicine
Decided by	Styrelsen för utbildning
Decision date	2011-10-18
Course syllabus valid from	Autumn 2011

Specific entry requirements

Dental Degree of at least 180 credits. In addition, knowledge of English equivalent to English B is required.

Objectives

- explain and integrate knowledge of somatic and craniofacial growth - assess children's developmental stage in relation to pubertal spurt - understand and describe the growth mechanisms of bone and cartilage tissue at the cellular level, and the normal and abnormal pre- and postnatal growth of the skull, jaws and occlusion, and the etiology and epidemiology of malocclusion - explain and integrate knowledge of cell biology with the desired and undesired tissue reactions associated with tooth movement - identify and distinguish the medical conditions that are of significance in orthodontic treatment - identify and distinguish the pharmacological preparations that are of significance in orthodontic treatment - identify and distinguish the conditions in the ear, nose and throat region that are of significance in orthodontic treatment - integrate and assess the role of craniocervical and orofacial functions in facial growth and development - account for causes and incidence of cleft lip and palate and other syndromes affecting normal facial and jaw development - interpret and analyse the causes of craniofacial malformations - demonstrate an integrated knowledge of multidisciplinary care of children with cleft lip and palate

Content

Cell and molecular biology with a focus on bone and cartilage, and the prenatal facial, jaw and dental arch development. Cleft lip and palate and craniofacial syndromes with a focus on etiology. Dental genetics. Molecular genetic investigation. Prenatal diagnosis. Genetic counselling. Tissue specific somatic growth. The postnatal development of the face, jaw and occlusion. Growth zones (sutures, synchondrosis, condylar cartilage), Growth theories, Growth prediction. Facial and occlusal postpubertal changes. The genetic, epigenetic and environmental impact of craniofacial development. Morphological characteristics associated with age, sex and ancestry. Effects of aging in facial hard and soft tissues. Ear, nose and throat diseases. Phoniatics. Pharmacology. Oral medicine. Oral physiology and pathophysiology.

Teaching methods

Cathedral lectures, group assignments, exercise in growth estimation by superimposition of profile radiographs. Interactive computer program for training in tooth eruption. Videos on facial and occlusal development. National course in genetics. Clinical observation at the molecular genetic laboratory, ear, nose and throat clinic and craniofacial centre.

Examination

Written examination with questions related to content of the lectures. Oral assessment of knowledge relating to patient consultations. Clinical audit and assessment of patients with self-reflection on treatment outcome and prognosis.

Other directives

Language of instruction: English

Literature and other teaching aids

Enlow, Donald H.

Essentials of facial growth

Hans, Mark G.

Philadelphia, Pa. : Saunders, cop. 1996 - xv,303p

ISBN:0-7216-6106-8 (pbk) ; £37.00 : Formerly CIP LIBRIS-ID:5522579

[Library search](#)

Facial clefts and craniosynostosis : principles and management

Vig, Katherine W. L.; Fonseca, Raymond J.; Turvey, Timothy A.

Philadelphia : Saunders, 1995 - 782 s.

ISBN:0-7216-3783-3 LIBRIS-ID:5521559

[Library search](#)

Essential cell biology

Alberts, Bruce

2. ed. : New York : Garland, 2004 - xxi, 740 s.

ISBN:0-8153-3481-8 (hft.) LIBRIS-ID:9097354

[Library search](#)

Becker, Wayne M.

The world of the cell

7. ed. : San Francisco, Calif. : Pearson, Benjamin Cummings, 2008, cop. 2009 - xxviii, 791, [89] s.
ISBN:978-0-321-55418-5 (international ed.) LIBRIS-ID:10955979

[Library search](#)

Nanci, Antonio

Ten Cate's oral histology Oral histology : development, structure, and function

Ten Cate, Arnold Richard

7. ed. : St. Louis : Mosby Elsevier, cop. 2008 - x, 411 s.
ISBN:978-0-323-04557-5 LIBRIS-ID:11315181

[Library search](#)

English, Jeryl D.; Peltomäki, Timo.; Pham-Litschel, Kate.

Mosby's orthodontic review Orthodontic review

St. Louis : Mosby Elsevier, cop. 2009 - xiv, 303 p.
ISBN:978-0-323-05007-4 LIBRIS-ID:10817174

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