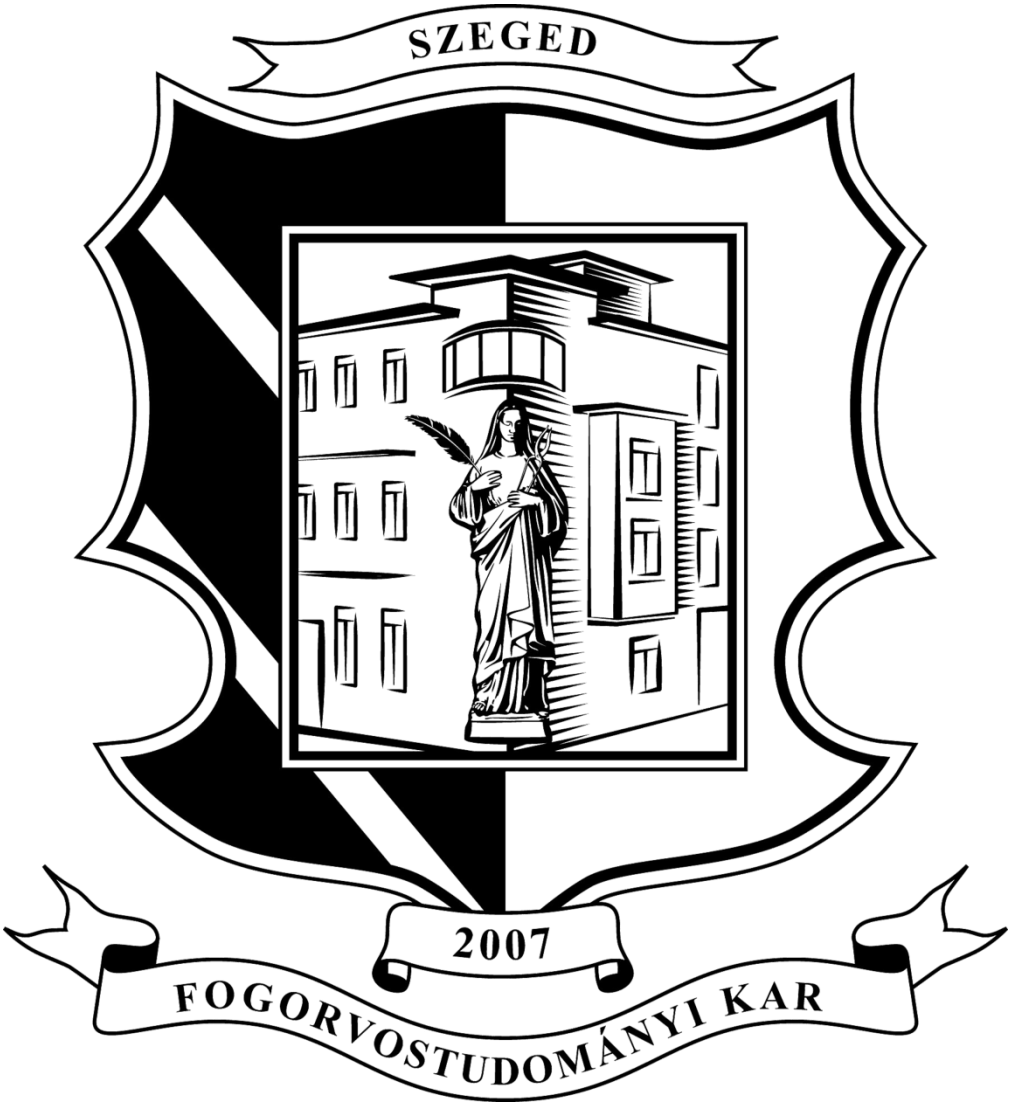
SYLLABUS

FACULTY OF DENTISTRY



BASIC MODULE

2016

COMPULSORY & CRITERIA SUBJECTS

FOG-MA011

ANATOMY FOR DENTAL STUDENTS I.

LECTURE

2015/2016, 1st semester, 1st year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Tuesday 10.00-12.00 (2 hours/week)
Exam: Examination
Credits: 2

Lecturer: Dr. Hajnalka Hegedűs assistant professor

Date	Topic
01. 09. 2015.	1. Terminology (planes, directions, parts of the human body). General osteology. General syndesmology.
08. 09. 2015.	2. General myology. General angiology. Main branches of the aorta and SVC-IVC.
15. 09. 2015.	3. General neurology. Brachial plexus.
22. 09. 2015.	4. Topographical summary of the upper limb.
29. 09. 2015.	5. Anatomy of the vertebral column (bones and joints). Thorax: bones and joints. I.
06. 10. 2015.	6. Thorax: bones and joints. II. Layers, muscles of the thoracic wall. Intercostal space.
13. 10. 2015.	7. Sensory and motor innervation of the lower limb.
20. 10. 2015.	8. Topographical summary of the lower limb.
27. 10. 2015.	9. Basic tissues.
03. 11. 2015.	10. Histology of the blood. Hematopoiesis and the Lymphatic System.
10. 11. 2015.	11. Anatomy of the skull I. (Bones of the skull and their connections)
17. 11. 2015.	12. Anatomy of the skull II. (Cavities of the skull)
24. 11. 2015.	13. Consultation I.
01. 12. 2015.	14. Consultation II.

Recommended literature:

It is recommended to purchase the latest editions of the following textbooks:

- R. Drake & A. W. Vogl & A. Mitchell: **Gray's Anatomy for Students**; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 1, 15th ed**., English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 2, 15th ed.**, English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 3, 15th ed**., English; ELSEVIER
- M. Loukas, B. Benninger, R. S. Tubbs : **Gray's Clinical Photographic Dissector of the Human Body**; ELSEVIER
- Kiernan: **Barr's The Human Nervous System**, International Student Edition, Lippincott Williams & Wilkins
- K. Won Chung: **Gross Anatomy**, Lippincott Williams & Wilkins
- W. Platzer: **Color Atlas of Human Anatomy, Volume 1**: Locomotor System;THIEME
- H. Fritsch, W. Kuehnel: **Color Atlas of Human Anatomy, Volume 2**: Internal Organs; THIEME

- W. Kahle, M. Frotscher: **Color Atlas of Human Anatomy, Volume 3**: Nervous System and Sensory Organs; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Head and Neuroanatomy**; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, General Anatomy and Musculoskeletal System**; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Neck and Internal Organs**; THIEME
- Netter, Frank H.: **Atlas of Human Anatomy**, Icon Learning Systems; ELSEVIER
- L. P. Gartner,J. L. Hiatt: **Concise Histology**; ELSEVIER
- Junqueira, Carneiro, Kelley: **Basic Histology**, Prentice Hall, International Student Edition, Mc Graw-Hill
- K. Moore & T. V. N. Persaud: **The Developing Human**; ELSEVIER
- Sadler: **Langman's Medical Embryology**, with Simbryo CD, Lippincott Williams & Wilkins

Conditions of acceptance of the semester:

- In line with the Study and Examinations Regulations of the University of Szeged, active participation is expected during the lectures and practices.
- At the beginning of each lecture, student attendance is confirmed by the teacher with a printed attendance sheet. The number of permitted absences is indicated in the Study and Examinations Regulations of the Faculties of Medicine and Dentistry. In line with these Regulations, if the percentage of absences exceeds 25 % of the teaching classes during the anatomy course, the semester cannot be accepted and has to be repeated.
- Students must arrive for the lectures and practices on time. If a student is late more than 15 minutes three times during the anatomy course, she or he is recorded as an absentee.
- Practices that the students fail to attend cannot be made up for.
- Every case of absence has to be justified with an authentic written medical certificate presented to Dr. Hajnalka Hegedűs within one week following the last day of absence.

End-Semester Examination in Anatomy (ESE)

For the first year dentistry students, the ESE is in the form of an **oral examination.** The exact examination dates and places are published in the ETR System. Students who are 15 minutes late for the announced oral examination will get a *DID NOT ATTEND* mark on their examination sheet.

FOG-MA012

ANATOMY FOR DENTAL STUDENTS I.

PRACTICE

2015/2016, 1st semester, 1st year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Thursday 15.00-17.00 (2 hours/week)
Exam: Term Mark
Credit: 1

Teacher: Dr. Hajnalka Hegedűs assistant professor

Date	Topic
03. 09. 2015.	1. Bones and joints of the upper limb.
10. 09. 2015.	2. Thoraco- and spinohumeral musculature. Muscles of the upper limb.
17. 09. 2015.	3. Blood and lymph circulation of the upper limb. The branches of the axillary artery.
24. 09. 2015.	4. Topographical summary of the upper limb.
01. 10. 2015.	5. **Demonstration 1 (**written assessment): anatomy of the upper limb.
08. 10. 2015.	6. Bones and joints of the lower limb
15. 10. 2015.	7. External and internal muscles of the hip. Muscles of the lower limb.
22. 10. 2015.	8. Blood and lymph circulation of the lower limb. Topographical summary of the lower limb.
29. 10. 2015.	9. Dissection room practice I.
05. 11. 2015.	10. **Demonstration 2** (written assessment): anatomy of the lower limb
12. 11. 2015.	11. Bones of the skull and their connections
19. 11. 2015.	12. Dissection room practice II.
26. 11. 2015.	13. **Demonstration 3** (written assessment): the skull
03. 12. 2015.	14. Consultation and re-take of the demonstrations (due to absence or unsatisfactory assessment results)

Recommended literature

It is recommended to purchase the latest editions of the following textbooks:

- R. Drake & A. W. Vogl & A. Mitchell: **Gray's Anatomy for Students**; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 1, 15th ed**., English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 2, 15th ed.**, English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 3, 15th ed**., English; ELSEVIER
- M. Loukas, B. Benninger, R. S. Tubbs: **Gray's Clinical Photographic Dissector of the Human Body**; ELSEVIER
- Kiernan: **Barr's The Human Nervous System**, International Student Edition, Lippincott Williams & Wilkins
- K. Won Chung: **Gross Anatomy**, Lippincott Williams & Wilkins
- W. Platzer: **Color Atlas of Human Anatomy, Volume 1**: Locomotor System;THIEME
- H. Fritsch, W. Kuehnel: **Color Atlas of Human Anatomy, Volume 2**: Internal Organs; THIEME
- W. Kahle, M. Frotscher: **Color Atlas of Human Anatomy, Volume 3**: Nervous System and Sensory Organs; THIEME

- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Head and Neuroanatomy**; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, General Anatomy and Musculoskeletal System**; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Neck and Internal Organs**; THIEME
- Netter, Frank H.: **Atlas of Human Anatomy**, Icon Learning Systems; ELSEVIER
- L. P. Gartner,J. L. Hiatt: **Concise Histology**; ELSEVIER
- Junqueira, Carneiro, Kelley: **Basic Histology**, Prentice Hall, International Student Edition, Mc Graw-Hill
- K. Moore & T. V. N. Persaud: **The Developing Human**; ELSEVIER
- Sadler: **Langman's Medical Embryology**, with Simbryo CD, Lippincott Williams & Wilkins

Conditions of acceptance of the semester:

- In line with the Study and Examinations Regulations of the University of Szeged, active participation is expected during the lectures and practices.
- At the beginning of each lecture, student attendance is confirmed by the teacher with a printed attendance sheet. The number of permitted absences is indicated in the Study and Examinations Regulations of the Faculties of Medicine and Dentistry. In line with these Regulations, if the percentage of absences exceeds 25 % of the teaching classes at the anatomy course, the semester cannot be accepted and has to be repeated.
- Students must arrive for the lectures and practices on time. If a student is late more than 15 minutes three times during the anatomy course, she or he is recorded as an absentee.
- Practices that the students fail to attend cannot be made up for.
- Every case of absence has to be justified with an authentic written medical certificate presented to Dr. Hajnalka Hegedűs within one week following the last day of absence.
- During the semester, the first-year dental students have to take part in three demonstrations (written assessments). These demonstrations will take place during the practical courses. The exact dates and topics of the demonstrations are detailed in the Anatomy Course Schedule. If a student is absent at a demonstration, his assessment is marked with a zero.

Grade system for the semester in anatomy practice

The arithmetical mean of the written assessments gives the mark for the semester in anatomy practice.
Calculation of the mark **for the semester in anatomy practice**:

Excellent: 4.50–5.00
Good: 3.51–4.4
Accepted: 2.51–3.50
Passed: 2.00–2.50
Failed: <2.00

An unsatisfactory written assessment, or written assessments that were not taken by a student due to absence, can be re-taken only on the last week of the semester. At the re-take of the written assessment, the students are tested **on the full anatomy practice material of the semester.**

FOG-MA013

ANATOMY FOR DENTAL STUDENTS II.

LECTURE

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, Yellow Room
Time: Monday 14.00-16.00 (2 hours/week)
Exam: Examination
Credits: 2

Date	Topic	Lecturer
01. 02. 2016.	1.**THORACIC CAVITY, ABDOMINAL WALL, CARDIOVASCULAR AND RESPIRATORY SYSTEM** Thorax (rev.), Diaphragm, muscles of respiration. Anatomy, blood supply, lymphatics of the breast (mammary gland).	Dr. Hajnalka Hegedűs assistant professor
08. 02. 2016.	2. Structure of the abdominal wall, rectus sheath, inguinal canal, hernial canals. Functional anatomy of back muscles. The thoracolumbar fascia.	Dr. Hajnalka Hegedűs
15. 02. 2016.	3. The anatomy and histology of the heart and the pericardium.	Dr. Hajnalka Hegedűs
22. 02. 2016.	4. Anatomy and histology of the trachea and the bronchial tree. Anatomy and histology of the lungs and the pleura.	Dr. Hajnalka Hegedűs
29. 02. 2016.	5. **DIGESTIVE SYSTEM** The anatomy and histology of the oral cavity; teeth, large salivary glands, and the tongue. I.	Dr. Hajnalka Hegedűs
07. 03. 2016.	6. The anatomy and histology of the oral cavity; teeth, large salivary glands, and the tongue. II. Anatomy and histology of the pharynx and the oesophagus.	Dr. Hajnalka Hegedűs
21. 03. 2016.	7. The anatomy and histology of the stomach, small intestine, large intestine and the rectum. The topography, anatomy and histology of the spleen.	Dr. Hajnalka Hegedűs
04. 04. 2016.	8. **UROGENITAL SYSTEM** Retroperitoneum, Gross anatomy, blood supply and histology of the kidney. Anatomy and histology of the ureter, urinary bladder and the urethra.	Dr. Hajnalka Hegedűs
11. 04. 2016.	9. The anatomy and histology of the male genital organs.	Dr. Hajnalka Hegedűs
18. 04. 2016.	10. **BLOOD, HEMATOPOIESIS AND THE LYMPHATIC SYSTEM.** Histology of the blood. Hematopoiesis. Histology of the immune system and lymphoid organs.	Dr. Bence András Lázár (Dept. of Psychiatry)
25. 04. 2016.	11. **ENDOCRINE SYSTEM I.**	Dr. Bence András Lázár
02. 05. 2016.	12. **ENDOCRINE SYSTEM II.**	Dr. Bence András Lázár
09. 05. 2016.	13. Consultation	Dr. Hajnalka Hegedűs

Recommended literature:

It is recommended to purchase the latest editions of the following textbooks:

- R. Drake & A. W. Vogl & A. Mitchell: **Gray's Anatomy for Students**; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 1, 15th ed**., English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 2, 15th ed.**, English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 3, 15th ed**., English; ELSEVIER
- M. Loukas, B. Benninger, R. S. Tubbs : **Gray's Clinical Photographic Dissector of the Human Body**; ELSEVIER
- Kiernan: **Barr's The Human Nervous System**, International Student Edition, Lippincott Williams & Wilkins
- K. Won Chung: **Gross Anatomy**, Lippincott Williams & Wilkins
- W. Platzer: **Color Atlas of Human Anatomy, Volume 1**: Locomotor System;THIEME
- H. Fritsch, W. Kuehnel: **Color Atlas of Human Anatomy, Volume 2**: Internal Organs; THIEME
- W. Kahle, M. Frotscher: **Color Atlas of Human Anatomy, Volume 3**: Nervous System and Sensory Organs; THIEME
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- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, General Anatomy and Musculoskeletal System**; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Neck and Internal Organs**; THIEME
- Netter, Frank H.: **Atlas of Human Anatomy**, Icon Learning Systems; ELSEVIER
- L. P. Gartner,J. L. Hiatt: **Concise Histology**; ELSEVIER
- Junqueira, Carneiro, Kelley: **Basic Histology**, Prentice Hall, International Student Edition, Mc Graw-Hill
- K. Moore & T. V. N. Persaud: **The Developing Human**; ELSEVIER
- Sadler: **Langman's Medical Embryology**, with Simbryo CD, Lippincott Williams & Wilkins

Conditions of acceptance of the semester:

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- Students must arrive for the lectures and practices on time. If a student is late more than 15 minutes three times during the anatomy course, she or he is recorded as an absentee.
- Practices that the students fail to attend cannot be made up for.
- Every case of absence has to be justified with an authentic written medical certificate presented to Dr. Hajnalka Hegedűs within one week following the last day of absence.

End-Semester Examination in Anatomy (ESE)

For the first year dentistry students, the ESE is in the form of an **oral examination.** The exact examination dates and places are published in the ETR System. Students who are 15 minutes late for the announced oral examination will get a *DID NOT ATTEND* mark on their examination sheet.

FOG-MA014

ANATOMY FOR DENTAL STUDENTS II.

PRACTICE

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, White Room
Time: Thursday 15.00-18.00 (3 hours/week)
Exam: Term Mark
Credit: 3

Teacher: Dr. Hajnalka Hegedűs assistant professor

Date	Topic
04. 02. 2016.	1. **THORACIC CAVITY, ABDOMINAL WALL, CARDIOVASCULAR AND RESPIRATORY SYSTEM** The anatomy of the mediastinum. Structures of the superior mediastinum and the posterior mediastinum.
11. 02. 2016.	2. The anatomy and histology of the heart and the pericardium.
18. 02. 2016.	3. Anatomy and histology of the nasal cavity and the paranasal sinuses. Anatomy and histology of the larynx.
25. 02. 2016.	4. Dissection room practice I.
03. 03. 2016.	5. **Demonstration 1 (**written assessment): Anatomy of the thoracic cavity, abdominal wall, mediastinum, heart, and the respiratory system (nasal cavity, larynx, trachea and lungs).
10. 03. 2016.	6. **DIGESTIVE SYSTEM** The anatomy of the peritoneum. The anatomy, blood circulation and histology of the liver and the gall bladder. The anatomy and histology of the pancreas.
17. 03. 2016.	7. Blood supply, lymphatic drainage and innervation of the organs of the abdominal cavity. Topography of the abdominal organs.
24. 03. 2016.	8. **Demonstration 2 (**written assessment): Anatomy of the digestive tract and the abdominal cavity.
07. 04. 2016.	9. **UROGENITAL SYSTEM** The anatomy and histology of the female genital organs.
14. 04. 2016.	10. The anatomy of the male and female perineum. Ischiorectal fossa, pudendal canal. Topography of the male and the female lesser pelvis.
21. 04. 2016.	11. Dissection room practice II.
28. 04. 2016.	12. **Demonstration 3** (written assessment): Anatomy of the lesser pelvis and urogenital organs.
05. 05. 2016.	13. Consultation and re-take of the demonstrations (due to absence or unsatisfactory assessment results) I.
12. 05. 2016.	14. Consultation and re-take of the demonstrations (due to absence or unsatisfactory assessment results) II.

Recommended literature:

It is recommended to purchase the latest editions of the following textbooks:

- R. Drake & A. W. Vogl & A. Mitchell: **Gray's Anatomy for Students**; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 1, 15th ed**., English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 2, 15th ed.**, English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 3, 15th ed**., English; ELSEVIER
- M. Loukas, B. Benninger, R. S. Tubbs : **Gray's Clinical Photographic Dissector of the Human Body**; ELSEVIER
- Kiernan: **Barr's The Human Nervous System**, International Student Edition, Lippincott Williams & Wilkins
- K. Won Chung: **Gross Anatomy**, Lippincott Williams & Wilkins
- W. Platzer: **Color Atlas of Human Anatomy, Volume 1**: Locomotor System;THIEME
- H. Fritsch, W. Kuehnel: **Color Atlas of Human Anatomy, Volume 2**: Internal Organs; THIEME
- W. Kahle, M. Frotscher: **Color Atlas of Human Anatomy, Volume 3**: Nervous System and Sensory Organs; THIEME
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- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, General Anatomy and Musculoskeletal System**; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Neck and Internal Organs**; THIEME
- Netter, Frank H.: **Atlas of Human Anatomy**, Icon Learning Systems; ELSEVIER
- L. P. Gartner,J. L. Hiatt: **Concise Histology**; ELSEVIER
- Junqueira, Carneiro, Kelley: **Basic Histology**, Prentice Hall, International Student Edition, Mc Graw-Hill
- K. Moore & T. V. N. Persaud: **The Developing Human**; ELSEVIER
- Sadler: **Langman's Medical Embryology**, with Simbryo CD, Lippincott Williams & Wilkins

Conditions of acceptance of the semester:

- In line with the Study and Examinations Regulations of the University of Szeged, active participation is expected during the lectures and practices.
- At the beginning of each lecture, student attendance is confirmed by the teacher with a printed attendance sheet. The number of permitted absences is indicated in the Faculty Academic Regulations of the Faculty of Dentistry. In line with these Regulations, if the percentage of absences exceeds 25 % of the teaching classes at the anatomy course, the semester cannot be accepted and has to be repeated.
- Students must arrive for the lectures and practices on time. If a student is late more than 15 minutes three times during the anatomy course, she or he is recorded as an absentee.
- Practices that the students fail to attend cannot be made up for.
- Every case of absence has to be justified with an authentic written medical certificate presented to Dr. Hajnalka Hegedűs within one week following the last day of absence.
- During the semester, the first-year dental students have to take part in three demonstrations (written assessments). These demonstrations will take place during the practical courses. The exact dates and topics of the demonstrations are detailed in the Anatomy Course Schedule. If a student is absent at a demonstration, his assessment is marked with a zero.

Grade system for the semester in anatomy practice

The arithmetical mean of the written assessments gives the mark for the semester in anatomy practice.
Calculation of the mark **for the semester in anatomy practice**:

Excellent: 4.50–5.00
Good: 3.51–4.4
Accepted: 2.51–3.50
Passed: 2.00–2.50
Failed: <2.00

An unsatisfactory written assessment, or written assessments that were not taken by a student due to absence, can be re-taken only on the last week of the semester.

Students who are marked with a five for all three of their written assessments during the semester, are given a mark five at the end of the semester.

FOG-MA015

ANATOMY FOR DENTAL STUDENTS III.

LECTURE

2015/2016, 1st semester, 2nd year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Tuesday 8.00-10.00 (2 hours/week)
Exam: Comprehensive Exam
Credits: 2

Date	Topic	Lecturer
01. 09. 2015.	1. Anatomy of the spinal cord. I. (Gross anatomy of the spinal cord. Fine structure of the grey matter of the spinal cord. Tracts of the white matter. I.)	Dr. Hajnalka Hegedűs assistant professor
08. 09. 2015.	2. Anatomy of the spinal cord. II. (Tracts of the white matter. II.)	Dr. Bence András Lázár (resident, Dept. of Psychiatry)
15. 09. 2015.	3. Anatomy of the brainstem. I. (Medulla oblongata, Pons, Mesencephalon. IV. ventricle, romboid fossa. Exit of the cranial nerves (brainstem, skull).	Dr. Hajnalka Hegedűs
22. 09. 2015.	4. Anatomy of the brainstem. II. (Fine structure of the medulla oblongata, pons, mesencephalon. Reticular formation.)	Dr. Bence András Lázár
29. 09. 2015.	5. Anatomy and topography of the cerebellum. Cerebellar nuclei. Synaptology, histology of the cerebellum.	Dr. Hajnalka Hegedűs
06. 10. 2015.	6. Anatomy of the Diencephalon, fine structure of the thalamus and the hypothalamus. Neurosecretion. III. ventricle, FLECHSIG's section, internal capsule, basal ganglia.	Dr. Bence András Lázár
13. 10. 2015.	7. Gross anatomy of the cerebrum: surfaces, lobes, gyri and sulci. Anatomy of the lateral ventricles. Circle of Willis, blood supply of the hemispheres. Meninges. Blood supply of the CNS, ventricles, CSF circulation.	Dr. Bence András Lázár
20. 10. 2015.	8. **Demonstration 1** (written assessment): anatomy of the CNS	Dr. Hajnalka Hegedűs
27. 10. 2015.	9. Anatomy and histology of the eye. Structure and blood supply of the retina. Accessory organs and muscles of the eye. Eye movements – pathways.	Dr. Hajnalka Hegedűs
03. 11. 2015.	10. Anatomy and histology of the external and middle ear. Anatomy of the inner ear: osseous, membranaceous labyrinth. Auditory, vestibular pathways.	Dr. Bence András Lázár
10. 11. 2015.	11. General Development.	Dr. Hajnalka Hegedűs
17. 11. 2015.	12. Consultation for the final exam I.	Dr. Hajnalka Hegedűs
24. 11. 2015.	13. Consultation for the final exam II.	Dr. Hajnalka Hegedűs
01. 12. 2015.	14. Consultation for the final exam III.	Dr. Hajnalka Hegedűs

Recommended literature

It is recommended to purchase the latest editions of the following textbooks:

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- M. Loukas, B. Benninger, R. S. Tubbs : **Gray's Clinical Photographic Dissector of the Human Body**; ELSEVIER
- Kiernan: **Barr's The Human Nervous System**, International Student Edition, Lippincott Williams & Wilkins
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- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Neck and Internal Organs**; THIEME
- Netter, Frank H.: **Atlas of Human Anatomy**, Icon Learning Systems; ELSEVIER
- L. P. Gartner,J. L. Hiatt: **Concise Histology**; ELSEVIER
- Junqueira, Carneiro, Kelley: **Basic Histology**, Prentice Hall, International Student Edition, Mc Graw-Hill
- K. Moore & T. V. N. Persaud: **The Developing Human**; ELSEVIER
- Sadler: **Langman's Medical Embryology**, with Simbryo CD, Lippincott Williams & Wilkins

Conditions of acceptance of the semester:

- In line with the Study and Examinations Regulations of the University of Szeged, active participation is expected during the lectures and practices.
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- Practices that the students fail to attend cannot be made up for.
- Every case of absence has to be justified with an authentic written medical certificate presented to Dr. Hajnalka Hegedűs within one week following the last day of absence.

Anatomy Final Examination

The Anatomy Final Examination begins with a short **written entry test**. The marking of this test is as follows:

Failed: 0-59 %
Passed: 60-69 %
Accepted: 70-79 %
Good: 80-89 %
Excellent: 90-100 %

The Anatomy Final Examination continues with **oral examination questions** from each of the following areas:

- the locomotor system
- visceral organs
- neuroanatomy

The final grade is determined by the average percentage of the grades resulted from the above-described four examination parts: one grade for the written and three for the oral examination.

FOG-MA016

ANATOMY FOR DENTAL STUDENTS III.

PRACTICE

2015/2016, 1st semester, 2nd year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Wednesday 12.00-14.00 (2 hours/week)
Exam: Term Mark
Credits: 2

Lecturer: Dr. Hajnalka Hegedűs assistant professor

Date	Topic
02. 09. 2015.	1. Bones of the skull. External, internal cranial base. (Review of the previous material).
09. 09. 2015.	2. Muscles of facial expression. Muscles of the neck. Muscle triangles. The temporomandibular joint. Muscles of mastication.
16. 09. 2015.	3. Arteries, veins, lymphatics of the head, neck.
23. 09. 2015.	4. Peripheral branches of the cranial nerves I.
30. 09. 2015.	5. Peripheral branches of the cranial nerves II.
07. 10. 2015.	6. Sympathetic and parasympathetic ganglia and associated autonomic nerves of the head and neck. Cervical plexus, skin innervation of the head and neck.
14. 10. 2015.	7. Dissection room practice I.
21. 10. 2015.	8. Topography of the head and neck I.
28. 10. 2015.	9. Topography of the head and neck II. (Fascial layers of the neck).
04. 11. 2015.	10. Topography of the cranial base, orbita, tympanic cavity.
11. 11. 2015.	11. Dissection room practice II.
18. 11. 2015.	12. **Demonstration 2 (written assessment): anatomy of the head and of the neck. Peripheral branches of the cranial nerves**
25. 11. 2015.	13. Consultation for the final exam I.
02. 12. 2015.	14. Consultation for the final exam II.

Recommended literature

It is recommended to purchase the latest editions of the following textbooks:

- R. Drake & A. W. Vogl & A. Mitchell: **Gray's Anatomy for Students**; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 1, 15th ed**., English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 2, 15th ed.**, English; ELSEVIER
- **Sobotta Atlas of Human Anatomy: Volume 3, 15th ed**., English; ELSEVIER
- M. Loukas, B. Benninger, R. S. Tubbs : **Gray's Clinical Photographic Dissector of the Human Body**; ELSEVIER
- Kiernan: **Barr's The Human Nervous System**, International Student Edition, Lippincott Williams & Wilkins
- K. Won Chung: **Gross Anatomy**, Lippincott Williams & Wilkins
- W. Platzer: **Color Atlas of Human Anatomy, Volume 1**: Locomotor System;THIEME
- H. Fritsch, W. Kuehnel: **Color Atlas of Human Anatomy, Volume 2**: Internal Organs; THIEME

- W. Kahle, M. Frotscher: **Color Atlas of Human Anatomy, Volume 3**: Nervous System and Sensory Organs; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Head and Neuroanatomy**; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, General Anatomy and Musculoskeletal System**; THIEME
- M. Schuenke, E. Schulte, U. Schumacher: THIEME **Atlas of Anatomy, Neck and Internal Organs**; THIEME
- Netter, Frank H.: **Atlas of Human Anatomy**, Icon Learning Systems; ELSEVIER
- L. P. Gartner,J. L. Hiatt: **Concise Histology**; ELSEVIER
- Junqueira, Carneiro, Kelley: **Basic Histology**, Prentice Hall, International Student Edition, Mc Graw-Hill
- K. Moore & T. V. N. Persaud: **The Developing Human**; ELSEVIER
- Sadler: **Langman's Medical Embryology**, with Simbryo CD, Lippincott Williams & Wilkins

Conditions of acceptance of the semester:

- In line with the Study and Examinations Regulations of the University of Szeged, active participation is expected during the lectures and practices.
- At the beginning of each lecture, student attendance is confirmed by the teacher with a printed attendance sheet. The number of permitted absences is indicated in the Study and Examinations Regulations of the Faculties of Medicine and Dentistry. In line with these Regulations, if the percentage of absences exceeds 25 % of the teaching classes at the anatomy course, the semester cannot be accepted and has to be repeated.
- Students must arrive for the lectures and practices on time. If a student is late more than 15 minutes three times during the anatomy course, she or he is recorded as an absentee.
- Practices that the students fail to attend cannot be made up for.
- Every case of absence has to be justified with an authentic written medical certificate presented to Dr. Hajnalka Hegedűs within one week following the last day of absence.
- During the semester, the second-year dental students have to take part in two demonstrations (written assessments). These demonstrations will take place during the lectures and the practical courses. The exact dates and topics of the demonstrations are detailed in the Anatomy Course Schedule. If a student is absent at a demonstration, his assessment is marked with a zero.

Grade system for the semester in anatomy practice

The arithmetical mean of the written assessments gives the mark for the semester in anatomy practice.

Calculation of the mark **for the semester in anatomy practice**:

Excellent: 4.50–5.00
Good: 3.51–4.4
Accepted: 2.51–3.50
Passed: 2.00–2.50
Failed: <2.00

An unsatisfactory written assessment, or written assessments that were not taken by a student due to absence, can be re-taken only on the last week of the semester. At the re-take of the written assessment, the students are tested **on the full anatomy practice material of the semester.**

BIOCHEMISTRY I.

FOG-MA031 **FOG-MA032**

	LECTURE (3 hrs/week)	**PRACTICE (2 hrs/week)**
*	Proteins and bioenergetics: structure and function of proteins, thermodynamics of living systems	General information, work safety and laboratory work
*	Enzymology: enzyme classes, coenzymes, characterisation of enzymes, isoenzymes, multienzyme systems	Substrate specificity and temperature optimum of amylase enzyme activity
*	Enzymology: molecular mechanism of catalysis, enzyme kinetics, modulation and regulation of enzyme activity	Determination of protein concentration
*	Carbohydrate metabolism: Digestion and absorption of carbohydrates, glycolysis, gluconeogenesis, pyruvate dehydrogenase enzyme complex	Seminar: proteins and enzymes*
*	Carbohydrate metabolism: glycogen metabolism, pentose phosphate cycle and glucuronide shunt	Assay of activity of alkalnine phosphatase
*	Carbohydrate metabolism: Fructose and galactose metabolism, glycoproteins, regulation of blood glucose level, diabetes mellitus	Seminar: carbohydrate metabolism*
*	Lipid metabolism: Digestion and absorption of lipids, lipoprotein metabolism, lipid mobilisation, oxidation of fatty acids, ketone bodies	Determination of glucose-6-phosphatase enzyme activity
*	Lipid metabolism: Synthesis of fatty acids, synthesis of triacyl glycerols and sphingolipids, cholesterol and steroid metabolism	Seminar: lipid metabolism*
*	Amino acid metabolism: Digestion and absorption of proteins, catabolism of amino acids, fate of amino group, urea cycle	MTO
*	Amino acid metabolism: catabolism of amino acids, fate of carbon skeleton of amino acids, one-carbon units, glutathione	Determination of uric acid concentration
*	Synthesis of hem and porphyrine, enterohepatic circulation of hem degradation products	Seminar: amino acid metabolism*
*	Nucleotide metabolism: synthesis and degradation of purine and pirimidine nucleotides, salvage pathways, synthesis of deoxyribonucleotides	Investigation of oxygen consumption of isolated mitochondria
*	Citric acid cycle: steps and regulation of the cycle, relationship between the cycle and other metabolic pathways	Seminar: nucleotide metabolism, citric acid cycle, respiratory chain, oxidative phosphorylation*
*	Mitochondrial transport systems, mechanism of respiratory chain and oxidative phosphorylation	Consultation

BIOCHEMISTRY II.

FOG-MA033

LECTURE	
*	Proteins and bioenergetics: structure and function of proteins, thermodynamics of living systems
*	Enzymology: enzyme classes, coenzymes, characterisation of enzymes, isoenzymes, multienzyme systems
*	Enzymology: molecular mechanism of catalysis, enzyme kinetics, modulation and regulation of enzyme activity
*	Carbohydrate metabolism: Digestion and absorption of carbohydrates, glycolysis, pyruvate dehydrogenase enzyme complex, gluconeogenesis
*	Carbohydrate metabolism: Fructose and galactose metabolism, glycogen metabolism, pentose phosphate cycle and glucuronide shunt
*	Carbohydrate metabolism: regulation of blood glucose level, glycoproteins Lipid metabolism: Eicosanoids, digestion and absorption of lipids, lipoprotein metabolism
*	Lipid metabolism: lipid mobilisation, oxidation of fatty acids, ketone bodies, diabetes mellitus
*	Lipid metabolism: Synthesis of fatty acids, synthesis of triacyl glycerols and phospholipids, sphingolipids, cholesterol and steroid metabolism
*	Amino acid metabolism: Digestion and absorption of proteins, catabolism of essential amino acids, fate of amino group, urea cycle
*	Amino acid metabolism: metabolism of non-essential amino acids, fate of carbon skeleton of amino acids, one-carbon units, glutathione
*	Amino acid metabolism: Synthesis of hem and porphyrine, enterohepatic circulation of hem degradation products
*	Citric acid cycle: steps and regulation of the cycle, relationship between the cycle and other metabolic pathways
*	Mitochondrial transport systems, mechanism of respiratory chain and oxidative phosphorylation
*	Nucleotide metabolism: synthesis and degradation of purine and pirimidine nucleotides, salvage pathways, synthesis of deoxyribonucleotides

Recommended textbooks

Obligatory:

- Robert K.Murray, Daryl K. Ganner, Peter A. Mayers, Vicot W. Rodwell: Harper's Illustrated Biochemistry 29th Edition 2012 ISBN: 978-0-07-176576-3

Recommended for 1st semester:

- W. J. Marshall, S. K. Bangert
  Clinical Chemistry
  6th Edition 2008
  ISBN:9780723434559
- P.C. Champe, R. A. Harvey
  Lippincott's Illustrated Reviews Biochemistry
  4th Edition 2008
  ISBN-13: 978-07817-6960-0
- J.W. Baynes, M. H. Dominiczak
  Medical Biochemsitry
  4th Edition, 2014-06-04 ISBN: 978-1-4557-4580-7

FOG-MA111

BIOLOGY FOR DENTAL STUDENTS I.

LECTURE

2015/2016, 1st semester, 1st year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, Yellow Room
Time: Wednesday 13.00-15.00 (2 hours/week)
Exam: Examination
Credit: 2

Date	Lecture	Lecturer
02. 09. 2015.	1. Macromolecules, water and the origin of life	Prof. Dr. János Minárovits professor
09. 09. 2015.	2. Cells and cell organelles	Prof. Dr. János Minárovits
16. 09. 2015.	3. DNA, gene, genome, chromosome	Prof. Dr. János Minárovits
23. 09. 2015.	4. DNA replication and cell division	Prof. Dr. Zoltán Rakonczay professor
30. 09. 2015.	5. Transcription, RNA molecules, RNA polymerases, RNA maturation	Prof. Dr. Zoltán Rakonczay
07. 10. 2015.	6. Genetic code, translation	Prof. Dr. Zoltán Rakonczay
14. 10. 2015.	7. Proteins: structure, function, processing and degradation	Prof. Dr. Zoltán Rakonczay
21. 10. 2015.	8. Bacterium genetics, somatic cell genetics	Prof. Dr. Zoltán Rakonczay
28. 10. 2015.	9. Polygenic inheritance	Prof. Dr. Zoltán Rakonczay
04. 11. 2015.	10. Membranes and transport processes	Prof. Dr. János Minárovits
11. 11. 2015.	11. Cytoskeleton, cell movement	Prof. Dr. János Minárovits
18. 11. 2015.	12. Basic immunology I.	Dr. Krisztina Buzás senior research fellow
25. 11. 2015.	13. Evolution	Prof. Dr. János Minárovits
02. 12. 2015.	14. Consultation	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay

Recommended literature:

William K. Purves, Gordon H. Orians, H. Craig Heller, David Savada: Life: Science of Biology (Seventh Edition) W. H. Freeman and Company, New York, 2005.

Conditions for accepting the semester

1. Active participation on lectures and seminars, based on the study and exam regulations of the University and of the Faculty of Dentistry,
2. Requirements of participation on lectures and seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry
3. Method of proof of the absence on seminars and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry
4. The precondition of the exam is the fulfillment of the Seminar.

FOG-MA112

BIOLOGY FOR DENTAL STUDENTS I.

SEMINAR

2015/2016, 1st semester, 1st year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, Yellow Room
Time: Wednesday 15.00-16.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Topics	Teacher
02. 09. 2015.	1. Basic laboratory methods and equipments I.	Prof. Dr. János Minárovits professor
09. 09. 2015.	2. Basic laboratory methods and equipments II.	Prof. Dr. János Minárovits
16. 09. 2015.	3. Specific microscopic methods I.	Prof. Dr. Zoltán Rakonczay professor
23. 09. 2015.	4. Specific microscopic methods II.	Prof. Dr. Zoltán Rakonczay
30. 09. 2015.	5. Separation methods I.	Prof. Dr. Zoltán Rakonczay
07. 10. 2015.	6. Demonstration	Prof. Dr. Zoltán Rakonczay
14. 10. 2015.	7. Chromosomes, chromosomal techniques, karyotyping	Prof. Dr. Zoltán Rakonczay
21. 10. 2015.	8. Prokaryotic gene regulation I.	Prof. Dr. Zoltán Rakonczay
28. 10. 2015.	9. Prokaryotic gene regulation II.	Prof. Dr. Zoltán Rakonczay
04. 11. 2015.	10. Eukaryotic gene regulation, epigenetics I.	Prof. Dr. János Minárovits
11. 11. 2015.	11. Eukaryotic gene regulation, epigenetics II.	Prof. Dr. János Minárovits
18. 11. 2015.	12. Demonstration	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay
25. 11. 2015.	13. Separation methods II.	Prof. Dr. János Minárovits
02. 12. 2015.	14. Consultation	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay

Recommended literature

William K. Purves, Gordon H. Orians, H. Craig Heller, David Savada: Life: Science of Biology (Seventh Edition) W. H. Freeman and Company, New York, 2005.

Conditions for accepting the semester

1. Active participation on lectures and seminars, based on the study and exam regulations of the University and of the Faculty of Dentistry,
2. Requirements of participation on lectures and seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry
3. Method of proof of the absence on seminars and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry
4. It is mandatory the fulfillment of the ***WRITTEN TESTS (1st and 2nd)***. The average mark of the tests should be at least 2.0. Unsatisfactory test should be corrected; there is only ONE possibility for the correction during the semester! The date of this correction Test is given by the responsible of the subject.

FOG-MA113

BIOLOGY FOR DENTAL STUDENTS II.

LECTURE

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, White Room
Time: Wednesday 13.00-15.00 (2 hours/week)
Exam: Examination
Credit: 2

Date	Lecture	Lecturer
03. 02. 2016.	1. Eukaryotic gene regulation	Prof. Dr. Zoltán Rakonczay professor emeritus
10. 02. 2016.	2. Cell-cell communication, signal transduction	Prof. Dr. Zoltán Rakonczay
17. 02. 2016.	3. Genetics of dental diseases	Prof. Dr. Zoltán Rakonczay
24. 02. 2016.	4. Cell cycle, cell death, DNA repair	Prof. Dr. János Minárovits professor
02. 03. 2016.	5. Cell cycle defects, carcinogenesis	Prof. Dr. János Minárovits
09. 03. 2016.	6. Basic immunology II.	Dr. Krisztina Buzás senior research fellow
16. 03. 2016.	7. Molecular basis of neuron function	Prof. Dr. Zoltán Rakonczay
23. 03. 2016.	8. RNA tumor viruses	Prof. Dr. János Minárovits
06. 04. 2016.	9. DNA tumor viruses	Prof. Dr. János Minárovits
13. 04. 2016.	10. Molecular diagnostics	Prof. Dr. János Minárovits
20. 04. 2016.	11. Genetically modified organisms, stem cell therapy	Prof. Dr. Zoltán Rakonczay
27. 04. 2016.	12. Epigenetic regulation	Prof. Dr. János Minárovits
04. 05. 2016.	13. Genome and gene therapy	Prof. Dr. Zoltán Rakonczay
11. 05. 2016.	14. Consultation	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay

Recommended literature:
William K. Purves, Gordon H. Orians, H. Craig Heller, David Savada: Life: Science of Biology (Seventh Edition) W. H. Freeman and Company, New York, 2005.

Conditions for accepting the semester

1. Active participation on lectures and seminars, based on the study and exam regulations of the University and of the Faculty of Dentistry.
2. Requirements of participation on lectures and seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.
3. Method of proof of the absence on seminars and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
4. The precondition of the exam is the fulfillment of the Seminar.

FOG-MA114

BIOLOGY FOR DENTAL STUDENTS II.

SEMINAR

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, White Room
Time: Wednesday 15.00-16.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Topics	Teacher
03. 02. 2016.	1. Immunohistochemistry I.	Prof. Dr. Zoltán Rakonczay professor emeritus
10. 02. 2016.	2. Immunohistochemistry II.	Prof. Dr. Zoltán Rakonczay
17. 02. 2016.	3. Recombinant DNA technology I.	Prof. Dr. János Minárovits professor
24. 02. 2016.	4. Recombinant DNA technology II.	Prof. Dr. János Minárovits
02. 03. 2016.	5. Western blot I.	Dr. Krisztina Buzás senior research fellow
09. 03. 2016.	6. Demonstration I.	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay
16. 03. 2016.	7. Polymerase chain reaction I.	Prof. Dr. János Minárovits
23. 03. 2016.	8. Polymerase chain reaction II.	Prof. Dr. János Minárovits
06. 04. 2016.	9. Excecises in genetics I.	Prof. Dr. Zoltán Rakonczay
13. 04. 2016.	10. Excecises in genetics II.	Prof. Dr. Zoltán Rakonczay
20. 04. 2016.	11. Demonstration II.	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay
27. 04. 2016.	12. DNA sequencing I.	Prof. Dr. János Minárovits
04. 05. 2016.	13. DNA sequencing II.	Prof. Dr. János Minárovits
11. 05. 2016.	14. Consultation	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay

Recommended literature:
William K. Purves, Gordon H. Orians, H. Craig Heller, David Savada: Life: Science of Biology (Seventh Edition) W. H. Freeman and Company, New York, 2005.

Conditions for accepting the semester

1. Active participation on lectures and seminars, based on the study and exam regulations of the University and of the Faculty of Dentistry.
2. Requirements of participation on lectures and seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.
3. Method of proof of the absence on seminars and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
4. It is mandatory the fulfillment of the ***WRITTEN TESTS (1st and 2nd)***. The average mark of the tests should be at least 2.0. Unsatisfactory test should be corrected; there is only ONE possibility for the correction during the semester! The date of this correction Test is given by the responsible of the subject.

FOG-MA171

BIOMATERIALS AND BIOCOMPATIBILITY IN DENTISTRY

LECTURE

2015/2016, 2nd semester, 2nd year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, Yellow Room
Time: Wednesday 13.00-15.00 (2 hours/week)
Exam: Evaluation (5)
Credit: 2

Date	Lecture	Lecturer
03. 02. 2016.	1. Introduction to biomaterials science. Historical overview. Classes of biomaterials used in dentistry and medicine	Dr. Kinga Turzó associate professor
10. 02. 2016.	2. Bulk and mechanical properties of materials and investigation methods (chemical bonds and structure, mechanical testing methods)	Dr. Kinga Turzó
17. 02. 2016.	3. Surface characteristics of materials and investigation methods (contact angle, ESCA, SIMS, SEM, IRS, STM, AFM)	Dr. Kinga Turzó
24. 02. 2016.	4. Metals (stainless steels, Co-Cr alloys, Ti alloys)	Dr. Kinga Turzó
02. 03. 2016.	5. Dental amalgams. Corrosion of metals. Hydrogels, bioresorbable and bioerodible materials	Dr. Kinga Turzó
09. 03. 2016.	6. **Written test (I.)**	Dr. Kinga Turzó
16. 03. 2016.	7. Polymers, types of polymers, polymerization, mechanical and thermal properties	Prof. Dr. Zoltán Rakonczay professor emeritus
23. 03. 2016.	8. Ceramics, glasses and glass-ceramics (bioinert, calcium-phosphate ceramics, bioactive glasses)	Dr. Kinga Turzó
06. 04. 2016.	9. Composites and natural materials (proteins, polysaccharides, polynucleotides)	Dr. Kinga Turzó
13. 04. 2016.	10. Host reactions to biomaterials and degradation of biomaterials in the biological environment	Dr. Kinga Turzó
20. 04. 2016.	11. Titanium implants and biointegration. Thin films, coatings and fabrics	Dr. Kinga Turzó
27. 04. 2016.	12. **Written test (II.)**	Dr. Kinga Turzó
04. 05. 2016.	13. Testing biomaterials (*in vitro*, *in vivo* assessment and animal models). Biocompatibility and biomechanical tests	Dr. Kinga Turzó
11. 05. 2016.	14.Consultation	Dr. Kinga Turzó

Recommended literature:

1. Biomaterials Science: An Introduction to Materials in Medicine. Ed. B.D Ratner, A.S. Hoffman, F.J. Schoen, J.E. Lemons. Academic Press, 1996.
2. O'Brien, W.J. Dental Materials and Their Selection, 3. ed. Quintessence, ISBN 0-86715-406-3, 2002

3. K.J. Anusavice: Phillips' Science of Dental Materials (10th ed), B. Saunders Company, ISBN 0-7216-5741-9, Philadelphia, Pennsylvania, USA, 1996

Conditions of accepting the credits/semester:

- Active participation on lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
- Requirements of participation on lectures and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.
- Method of proof of the absence on lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
- **It is mandatory the fulfillment of the WRITTEN TESTS. The average mark of the tests should be at least 1.50. Unsatisfactory test should be corrected; there is only ONE possibility for the correction during the semester! The date of this correction Test is given by the responsible of the subject.**
- **The topics of the Written Tests are provided on the CooSpace until 24 of February 2016.**
- **Absence from the Written test can be excused only in case of an illness, proved by Doctor's certificate.**
- **The mark of the Evaluation (5 grades**) is established in the following way: calculation of the average = sum of the grades of each Written test / number of Written tests. The failed Written test is also considered.
- Grades: excellent (5): 4.50-5.00; good (4): 3.50-4.49; accepted (3): 2.50-3.49; passed (2): 1.50-2.49; failed (1): 0-1.49.

CHEMISTRY FOR DENTAL STUDENTS I.

1st semester (14 weeks)

WEEK	LECTURE - (FOG-MA101) (2 hrs/week)	SEMINAR (1 hr/week)	PRACTICE - (FOG-MA102) (2 hrs/week – 8 weeks)
1.	Basic terms. The mole concept. Basic structure of atoms. Electronic structure of atoms. Atomic theories. The periodic table. Explanation of periodic properties.	Review of laboratory requirements. Fire and safety precautions. Requirements for completion of the semester.	No practice these weeks.
2.	Chemical bonding. Octet rule. Ionic bonding. Ionic solids, monatomic and polyatomic ions. Covalent bonds. Characterization of molecules. Dipole moment. Molecular geometry. Metallic bonding.	Electronic configuration of atoms. Chemical calculations: concentration of solutions.	
3.	Intermolecular forces: hydrogen bonding and van der Waals forces (dipole-dipole and London forces). Introduction to inorganic chemistry. Types of metathesis reactions. Classification and properties of metals. Alloys. Properties and compounds of alkali metals, alkaline-earth metals and aluminum.	The periodic table. Continuation of practicing simple chemical calculations.	
4.	Properties and compounds of d-transition metals. Complex ions and chelates. Hydrogen and its compounds. Importance of radioactive isotopes in medicine.	Intra- and intermolecular chemical bonds. Titration calculations.	Background of volumetric analysis. Using a pipette and a burette. The principle of photometry, Lambert-Beer law.
5.	Properties of the most important nonmetals and their compounds. Biological importance and usage. Formation and physiological effects of free radicals.	Metals and their compounds. Complexes. Metathesis reactions.	During weeks 5 to 9 students work in rotation and conduct one of the following experiments each week: I) Quantitative determination of HCl content by titration with NaOH solution. II-III) Qualitative analysis (2 weeks). IV) Complexometric determination of calcium ions. V) Determination of pK_a of a known concentration weak acid solution through the preparation of different buffers. VI) Quantitative determination of Fe(II)-content by permanganometric titration measuring the redox potential. VII) Photometric determination of iron.
6.	States of matter. Properties of gases, liquids and solids. Types of crystalline lattice. Phase changes. Homogenous and heterogeneous systems. Colloids. Solutions. Types of solutions. The solution process. Ways of expressing concentration.	Nonmetals and their compounds. Practicing metathesis reactions.	
7.	Osmosis and its biological importance. Chemical equilibrium. LeChatelier's principle. Electrolytic dissociation, strong and weak electrolytes. Acid-base concepts.	Solutions. Continuation of practicing simple chemical calculations.	
8.	Self-ionization of water, pH and pOH. Acid-base ionization equilibrium. Acid-base titration. Common-ion effect. Buffers and their biological importance.	Chemical equilibrium. Application of LeChatelier’s principle. Acid-base concepts.	
9.	Electrochemistry. Redox reactions. Standard reduction potentials. Strength of oxidizing or reducing agents. Voltaic cells, types of electrodes. Reference electrodes. Glass electrodes, measurement of pH. Electrolysis.	Simple pH calculations. Buffers, calculations involving buffers.	
10.	Reaction kinetics. Rate, order, molecularity and mechanism of reactions. Complex chemical reactions. Catalysis. Enzymes as biocatalysts. Thermochemistry. Basic terms. First, second and third laws of	Oxidation-reduction reactions. Voltaic cells.	Weeks 10 and 11: make-up laboratory practicals.

	thermodynamics. Entropy and disorder. Change in Gibb's free energy and spontaneity of a reaction.		
11.	General principles of organic chemistry. Classification of organic compounds. Functional groups. Types of organic chemical reactions: substitution, addition, and elimination. Alkanes (paraffin hydrocarbons). Cycloalkanes.	Brief summary of chemical thermodynamics and reaction kinetics.	
12.	Alkenes. Addition and polymerization. Dental polymers. Dental composites, their structure. Alkynes. Structure of conjugated dienes. Isoprene and terpenes. Carotinoids. Vitamin A. The photochemistry of vision.	Types of organic chemical reactions. Saturated hydrocarbons: alkanes and cycloalkanes.	No practice these weeks.
13.	Aromatic hydrocarbons. Structure and reactions of benzene. Organic halogen compounds.	Unsaturated hydrocarbons: alkenes and alkynes. .	
14.	Hydroxyl group containing organic compounds: alcohols, enols and phenols. Classification, nomenclature and chemical properties of alcohols. Esters of alcohols formed with inorganic acids. Phenols. Acidity of phenols. Oxidation of phenols, quinones. Ethers. Thioalcohols, thioethers, sulfoxides and sulfones.	Aromatic hydrocarbons Organic halogen compounds.	

CHEMISTRY FOR DENTAL STUDENTS II.

2nd semester (14 weeks)

WEEK	LECTURE - (FOG-MA103) (2 hrs/week)	SEMINAR (1 hr/week)	PRACTICE - (FOG-MA104) (2 hrs/week – 8 weeks)
1.	Three-dimensional structure of molecules: constitution, configuration and conformation. Optical isomerism. Enantiomers, racemates. Configuration: D-L and R-S systems. Molecules with more than one chiral centers. Diastereomers.	Fire and safety precautions. Requirements for completion of the semester. Summary of organic chemical reactions.	No practice these weeks.
2.	Classification and nomenclature of amines. Basicity of amines, salt formation. Biologically important amines and aminoalcohols. Amines as neurotransmitters. Reactions of amines. Sulfonamides.	Chirality, optical isomerism.	
3.	Classification and nomenclature of heterocyclic compounds. Three- and four-membered heterocycles: beta-lactams. Five-membered heterocycles with one and two heteroatoms. Six-membered heterocycles with one heteroatom: nicotinamide, flavonoids. Six-membered heterocycles with two heteroatoms: pyrimidines, barbituric acid and barbiturates. Purines. Uric acid.	Amines.	
4.	Oxo compounds. Structure of the carbonyl group. Chemical reactions of aldehydes and ketones: addition and condenzation reactions. Enol-oxo tautomerism and aldol dimerization of oxo compounds. The role of these reactions in biochemical processes. Oxidation and reduction reactions. Important oxo compounds: quinones, coenzyme Q and vitamin K.	Heterocyclic compounds.	During weeks 4 to 8 students work in rotation and conduct one of the following experiments each week: I) Determination of pK_a of a known concentration weak acid solution through the preparation of different buffers.

5.	Classification and nomenclature of carboxylic acids. Acidity, salt formation. Homologous series of saturated and unsaturated carboxylic acids. Fatty acids. Dicarboxylic acids. Unsaturated and hydroxy carboxylic acids. Oxo acids, "ketone bodies". Derivatives of carbonic acid: urea, guanidine, creatine, phosphocreatine.	Aldehydes, ketones, and quinones.	II) Quantitative determination of Fe(II)-content by permanganometric titration measuring the redox potential. III) Photometric determination of iron. IV) Polarimetric determination of sugar. V) Quantitative determination of a protein by photometric method. VI) Quantitative determination of vitamin C content by bromatometric titration.
6.	Carboxylic acid derivatives: esters, thioesters, acyl halides, anhydrides, amides. Acylation reaction, acylating agents. Acid-catalyzed esterification and hydrolysis of esters. Soaps, detergents. Phosphoglycerydes. The structure of biological membranes.	Carboxylic acids. Substituted carboxylic acids.	
7.	Classification and nomenclature of amino acids. Proteinogenic amino acids. Amphoteric character: isoelectric points. Essential amino acids, biological importance. Qualitative tests, preparation and separation of amino acids. Chemical properties. Peptides. Stereochemistry of the peptide bond. Principles of sequence analysis. Synthesis of peptides.	Carboxylic acid derivatives. Lipids.	
8.	Biological importance of peptides. Naturally occurring peptides. Important peptide hormones, analogues and peptide antibiotics. Structure and function of proteins. Physical and chemical properties, purification and classification of proteins. Qualitative tests. The three-dimensional structure of proteins. Protein folding. Denaturation of proteins. Biological importance of proteins: transport, contractile, structural, nutrient, storage, defense and regulation proteins. Enzyme reactions.	Amino acids.	
9.	Classification of carbohydrates. Configuration. D-glucose, mutarotation, anomers. Cyclic structures. Chemical properties of monosaccharides: oxidation, reduction, formation of ethers and esters, formation of O- and N-glycosides. Important monosaccharides: aldoses and ketoses and their derivatives.	Peptides and proteins.	Bioorganic chemistry: some chemical reactions of proteins and carbohydrates.
10.	Structure of disaccharides. Nonreducing disaccharides: sucrose. Reducing disaccharides: maltose, cellobiose, lactose. Oligosaccharides. Complex oligosaccharides. Polysaccharides: starch, glycogen, cellulose.	Monosaccharides.	Weeks 10 and 11: make-up laboratory practicals.
11.	Steroids. Classification of steroids. Cholesterol, Vitamins D2 and D3. Bile acids and their detergent effect. Steroid hormones. Corticosteroids: mineralo- and glucocorticosteroids. Sex hormones.	Di- and polysaccharides.	
12.	Structure and properties of nucleosides and nucleotides. Nucleic acid bases (uracil, thymine, cytosine, adenine, guanine). Nucleotide coenzymes. Nucleic acids: RNA and DNA. Hydrolysis, purification and properties of nucleic acids.	Steroids.	No practice these weeks.
13.	Sequence analysis and synthesis of nucleic acids. Structure of DNA: double helix. Denaturation of DNA. Biological importance of nucleic acids. Important bioorganic compounds I. Water-soluble vitamins and their coenzymes. Fat-soluble vitamines. Hypo- and hypervitaminosis.	Nucleosides, nucleotides, and nucleic acids.	
14.	Important bioorganic compounds II. Alkaloids, most important representatives. Antibiosis. Classification of antibiotics. Penicillin. Porphin-ring containing compounds. Protoporphyrin-IX and heme. Structure and biological importance of hemoglobin and myoglobin. Chlorophyll.	Vitamins and coenzymes.	

RECOMMENDED TEXTBOOKS

- **Ebbing: General Chemistry**
  (Several different editions are available and can be used. The latest one is the following:
  Ebbing – Gammon: General Chemistry, 10th Edition,
  Houghton Mifflin Company, New York, Boston)

- **Hart: Organic Chemistry**
  (Several different editions are available and can be used. The latest one is the following:
  Hart –Craine – Hart – Hadad: Organic Chemistry, A Short Course, 13th Edition, Houghton Mifflin Company, Boston, New York)

- **P. Gergely: Organic and Bioorganic Chemistry for Medical Students**
  University Medical School of Debrece

OTHER HELPFUL TEXTBOOK

- **McMurry-Castellion: Fundamentals of General, Organic, and Biological Chemistry**
  (Pearson Prentice Hall, Pearson Education, Inc.)

REQUIREMENTS FOR COMPLETION OF THE SEMESTER IN CHEMISTRY FOR DENTAL STUDENTS

The *Chemistry for Dental Students* course consists of lectures, seminars and practices. According to the Integrated Code of Study and Examination Regulations, an attendance at all academic class is compulsory. Since the number of absences during a semester may not exceed 25%, upon the accumulation of more than 25% absences from the lectures, seminars and practices students may be asked to repeat the course.

There are 5 graded **practices** in chemistry during the semester. Students work in pairs to conduct the measurement and each of them must complete their own lab-report to submit for a grade. Based on the lab-reports, any performed measurement worth from 1 to 5 points. In this way, students can collect the maximum of 25 points during the semester.
Students take two **class-tests** (MTOs) during the semester.
Students will get a **term mark** at the practice. If the term mark is failed (1), the student has to pass a practical exam or else the course must be repeated. The term mark is the average of the *grade earned based on the class-tests (MTOs)* and *grade calculated from the practical points*.

The *grade earned based on the class tests (MTOs)* is determined from the average of the results (expressed in percentage) of the two class-tests (MTOs) as follows:

85-100%	excellent (5)
70-85%	good (4)
60-70%	accepted (3)
50-60%	passed (2)
0-50%	failed (1)

The *grade calculated from the practical points* is determined as follows:

22-25 pts	excellent (5)
18-21 pts	good (4)
15-17 pts	accepted (3)
12-14 pts	passed (2)
0-11 pts	failed (1)

The **end-semester exam** is an oral exam. The exam grade is the average of the topic grades, but all topic grades must be at least 2.

FOG-MA021

DENTAL ANATOMY

LECTURE

2015/2016, 1st semester, 2nd year, Dental students
Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, Lecture Hall
Time: Friday 14.30-17.30 (2 hours/week, 4 hours in every 2 weeks, 26 hours altogether)
Exam: Examination
Credit: 2

Date	Lecture	Lecturer
2015.09.18.	1. The object and importance of Dental Anatomy. Biomimetics 2. Dental terminology and nomenclature. Orientation, surfaces. Shape elements, contact points, positions	Dr. Emil Segatto associate professor Dr. Angyalka Segatto assistant lecturer
2015.10.02.	3. Primary tooth anatomy 4. Structure of permanent teeth	Dr. Emil Segatto Dr. Angyalka Segatto
2015.10.16.	5. Maxillary incisors 6. Mandibular incisors 7. Maxillary and mandibular canines	Dr. Emil Segatto Dr. Angyalka Segatto
2015.10.30.	8. Maxillary premolars 9. Mandibular premolars	Dr. Emil Segatto Dr. Angyalka Segatto
2015.11.13.	10. Maxillary molars 11. Mandibular molars	Dr. Emil Segatto Dr. Angyalka Segatto
2015.11.27.	12. Variation in form and shape. Incisors and canines. Premolars 13. Variation in form and shape. Premolars and molars	Dr. Emil Segatto Dr. Angyalka Segatto

Recommended literature:

- Nelson, Ash: Wheeler's Dental Anatomy, Physiology and Occlusion, 9th Edition, Saunders – 2010
- Scheid, Weiss: Woelfel's Dental Anatomy: Its Relevance to Dentistry, 8th Edition, Lippincott Williams & Wilkins – 2012

Conditions of accepting the semester:

- Active participation on lectures, based on the Study and Exam Regulations of the University,
- Attendance of lectures is mandatory.
- Demonstrations will take place during the practical course. Knowledge of selected references related to each topic, the average mark of all the tests should be at least 2.0 (the mark of small tests may be max. 2 times 1).
- Unsatisfactory test should be corrected; it may be corrected **only once!**
- Students must come to the practices in time. If a student is late three times, it is equal to one missing. If a student comes more than 20 minutes late, it is regarded as an absence.

FOG-MA022

DENTAL ANATOMY
PRACTICE

2015/2016, 1st semester, 2nd year, Dental students
Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, Lecture Hall
Time: Friday 13.00-14.30 (1 hour/week, 2 hours in every 2 weeks)
Exam: Term Mark
Credit: 1

Teachers: Dr. Emil Segatto associate professor
Dr. Angyalka Segatto assistant lecturer

Date	Practice
2015.09.18.	1. Tooth structure - drawing exercise in 2D and 3D, study of pulpal sections 2. Maxillary incisors. Natural tooth identification. Drawing exercise
2015.10.02.	3. Mandibular incisors. Natural tooth identification. Drawing exercise 4. Maxillary and mandibular canines. Natural tooth identification. Drawing exercise
2015.10.16.	5. Maxillary premolars. Mandibular premolars. Natural tooth identification. Drawing exercise 6. Maxillary molars. Natural tooth identification. Drawing exercise
2015.10.30.	7. Mandibular molars. Natural tooth identification. Drawing exercise 8. Maxillary incisors. Tooth model reconstruction with plasticine
2015.11.13.	9. Mandibular incisors. Tooth model reconstruction with plasticine 10. Maxillary and mandibular canines. Tooth model reconstruction with plasticine 11. Maxillary premolars. Mandibular premolars. Tooth model reconstruction with plasticine
2015.11.27.	12. Maxillary molars. Tooth model reconstruction with plasticine 13. Mandibular molars. Tooth model reconstruction with plasticine

Conditions of accepting the semester:

- Active participation on practices, based on the Study and Exam Regulations of the University,
- Attendance of practices is mandatory.
- Completion of the tasks in the practices, average of grades should be at least 2.0.
- Demonstrations will take place during the practical course. Knowledge of selected references related to each topic, the average mark of all the tests should be at least 2.0 (the mark of small tests may be max. 2 times 1).
- Unsatisfactory test should be corrected; it may be corrected **only once!**
- Students must come to the practices in time. If a student is late three times, it is equal to one missing. If a student comes more than 20 minutes late, it is regarded as an absence.

FOG-MA091

DENTAL BIOMETRY AND EVALUATION OF RESEARCH RESULTS

LECTURE

2015/2016, 1st semester, 2nd year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, Yellow Room
Date: Monday 8.00-10.00 (1 hour/week, 2 hours in every two weeks)
Exam: Evaluation (5)
Credit: 1

Date	Lecture	Lecturer
07. 09. 2015.	1. The importance and applications of statistics in dental sciences. Introduction to Mathematics, Part I. (definition of functions, different type of determinations and analysis) 2. Introduction to Mathematics, Part II. (set theory, combinatorics). Populations, probability, discrete variables and probability distributions	Dr. Kinga Turzó associate professor
21. 09. 2015.	3. Continuous variables and frequency distributions. Normal distribution and the standard normal distribution. Parameters of distribution: arithmetic mean, median, mode, standard deviation, variance, standard error of the mean 4. Theoretical background of tests of significance: null hypothesis, level of significance, degree of freedom, possible errors	Dr. Kinga Turzó
05. 10. 2015.	5. Parametric tests. Verification of normality. Student's *t*-test for paired samples 6. Student's *t*-test for unpaired samples and the F-test for variances	Dr. Kinga Turzó
19. 10. 2015.	7. **Written test (I.)** 8. Analysis of variance (ANOVA-test)	Dr. Kinga Turzó
02. 11. 2015.	9. Non-parametric methods (Wilcoxon, Mann-Whitney U-test etc.) 10. Analysis of discrete variables: χ^2 - test and Fisher exact test (contingency table)	Dr. Kinga Turzó
16. 11. 2015.	11. **Written test (II.)** 12. Linear regression and the *t*-test of correlation. Linearization	Dr. Kinga Turzó
30. 11. 2015.	13. Statistical analysis and data analysis in statistical programs 14. Consultation	Dr. Kinga Turzó

Conditions of accepting the semester and the credits:

- Active participation on lectures and practices, based on the study and exam regulations of the University and of the Faculty of Dentistry.
- Requirements of participation on lectures and practices and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.

- Method of proof of the absence on practices and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
- It is mandatory the fulfillment of the WRITTEN TESTS (1st and 2nd). The average mark of the tests should be at least 2.0. Unsatisfactory test should be corrected; there is only ONE possibility for the correction during the semester! The date of this correction Test is given by the responsible of the subject. Absence from the Written test can be excused only in case of an illness, proved by Doctor's certificate.
- **The mark of the Evaluation (5 grades)** is established in the following way: Calculation of the average: sum of the grades of each Written test / number of Written tests.
- Grades: excellent (5): 4,50-5,00; good (4): 3,50-4,49; accepted (3): 2,50-3,49; passed (2): 1,50-2,49; failed (1): 0-1,49.

Recommended literature:

- G.M. Clarke: Statistics and experimental design. A series of student texts in CONTEMPORARY BIOLOGY. Eds.: A.J. Willis, M.A. Sleigh, by Edward Arnold (Publishers) Ltd., Second Edition, 1980
- J.A. von Fraunhofer and J.J. Murray: Statistics in Medical, Dental and Biological Studies, TRI-MED BOOKS LTD. First published 1976

FOG-MA092

DENTAL BIOMETRY AND EVALUATION OF RESEARCH RESULTS

PRACTICE

2015/2016, 1st semester, 2nd year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, Phantom Laboratory
Date: 1 hour/week
Dent 1: Monday 10.00-11.00
Dent 2: Monday 11.00-12.00
Exam: Term Mark
Credit: 1

Teacher: Dr. Gábor Braunitzer assistant professor

Date	Topics covered
31. 08. 2015.	1. The process of statistical analysis in general. Useful softwares. Data types: categorical and continuous. Normal distribution and its significance in statistics. Shapiro-Wilk test for the determination of distribution normality.
07. 09. 2015.	2. Basic/descriptive statistics for categorical and continuous data: frequency, crosstabs, mean, mode, median, standard deviation. The importance of precise data input and possible pitfalls. The importance of basic/descriptive statistics in the explanation of statistical analyses.
14. 09. 2015.	3. Testing the association between continuous variables: Pearson's and Spearman's correlation analysis. Understanding statistical significance. Reporting the results of a correlation analysis.
21. 09. 2015.	4. Practising the methods covered during sessions 1-3
28. 09. 2015.	5. Written test I. (sessions 1-3)
05. 10. 2015.	6. Testing the difference between continuous variables: dependent and independent variables (grouping and target variables). Testing the difference between continuous variables of normal distribution: ANOVA for two or more groups. Post-hoc tests. Reporting ANOVA results.
12. 10. 2015.	7. Testing the difference between continuous variables: variables of non-normal distribution. The Mann-Whitney U test and Kruskal-Wallis ANOVA. Reporting the results.
19. 10. 2015.	8. Testing the difference between continuous variables: variables of non-normal distribution. The Mann-Whitney U test and Kruskal-Wallis ANOVA. Reporting the results.
26. 10. 2015.	9. Testing the association between categorical variables: chi square test and regression analysis. Reporting the results.
02. 11. 2015.	10. Practising the methods covered during sessions 5-8
09. 11. 2015.	11. Written test II. (sessions 5-8)
16. 11. 2015.	12. Preparation of a full analysis with descriptive statistics, comparisons and explanation.
23. 11. 2015.	13. Preparation of a full analysis with descriptive statistics, comparisons and explanation.
30. 11. 2015.	14. Written test III.: Preparation of a full analysis with descriptive statistics, comparisons and explanation.

Conditions of accepting the semester and the credits:

- Active participation on lectures and practices, based on the study and exam regulations of the University and of the Faculty of Dentistry.
- Requirements of participation on lectures and practices and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.
- Method of proof of the absence on practices and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
- The Practice is fulfilled only if the average mark of the Written tests is at least 2.0 and the tasks given on the Practice are solved. Unsatisfactory test should be corrected; there is only ONE possibility for the correction during the semester! Absence from the Written test can be excused only in case of an illness, proved by Doctor's certificate.
- **Calculation of the Term Mark:** the average of all the Written tests and Practice tasks.
- Term mark grades: excellent (5): 4,50-5,00; good (4): 3,50-4,49; accepted (3): 2,50-3,49; passed (2): 1,50-2,49; failed (1): 0-1,49.

FOG-MA051

DENTAL INSTRUMENTS

LECTURE

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, White Room
Time: Thursday 13.00-15.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Lecture	Lecturer
04. 02. 2016.	1. Introduction. An overview of the semester. Grading and the conditions of acceptance	Dr. Gábor Braunitzer assistant professor
11. 02. 2016.	2. The mirror and its alternatives: intraoral cameras and intraoral scanners. Dentistry and virtual reality	Dr. Gábor Braunitzer
18. 02. 2016.	3. The future of the dental inventory: laser, sandblaster, chairside CAD-CAM and other cutting edge instruments	Dr. Márk Antal assistant professor
25. 02. 2016.	4. The instruments of clinical dental research - cooperating with other professions	Dr. Gábor Braunitzer
03. 03. 2016.	5. Fully equipped dental surgery	Prof. Dr. Katalin Nagy professor
10. 03. 2016.	6. Visiting a private dental practice	Prof. Dr. Katalin Nagy
17. 03. 2016.	7. X-ray machine, Orto-pan tomogram	Dr. Zoltán Baráth associate professor

Recommended literature:
Linda R. Boyd: Dental Instruments
2nd ed. A Pocket Guide
DENTISTRY An illustrated History (Marvin E. Ring, D.D.S. Abradale Press)

Conditions of accepting the semester:
- Active participation on lectures and practices, based on the Study and Exam Regulations of the University,
- Attendance of lectures and practices is mandatory.
- Completion of the tasks in the practices, average of grades should be at least 2.0.
- Keeping the safety rules of the laboratory.
- Pass each (two) midterm written examination. Unsatisfactory test should be corrected; it may be corrected.
- Knowledge of selected references related to each topic, the average mark of all the tests should be at least 2.0 (the mark of small tests may be max. 3 times 1).

Students must come to the practice in time:
If a student is late three times, it is equal with one missing.
If a student comes more than 20 minutes late, it is regarded as an absence.

FOG-MA052

DENTAL INSTRUMENTS

PRACTICE

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, White Room
Time: Thursday 13.00-15.00 (1 hour/week)
Exam: Term Mark
Credit: 1

Date	Practice	Teacher
24. 03. 2016.	8. Dental Instruments used in operative dentistry, endodontics	Dr. Donát Simon-Fiala resident Dr. Gábor Braunitzer assistant professor
07. 04. 2016.	9. Dental instruments used in oral surgery	Prof. Dr. Katalin Nagy professor
14. 04. 2016.	10. Dental instruments used in prosthetic dentistry	Dr. Nándor Práger assistant lecturer
21. 04. 2016.	11. Dental Instruments used in orthodontics and pediatric dentistry	Dr. Árpád Sáfrány-Fárk assistant lecturer
28. 04. 2016.	12. Dental instruments used in periodontology, oral hygiene instruments	Dr. George Kaposvári resident
05. 05. 2016.	13. Exam	Dr. Éva Zsótér assistant lecturer
12. 05. 2016.	14. Semester overview	Dr. Éva Zsótér

Conditions of accepting the semester:
- Active participation on lectures and practices, based on the Study and Exam Regulations of the University,
- Attendance of lectures and practices is mandatory.
- Completion of the tasks in the practices, average of grades should be at least 2.0.
- Keeping the safety rules of the laboratory.
- Pass each (two) midterm written examination. Unsatisfactory test should be corrected; it may be corrected.
- Knowledge of selected references related to each topic, the average mark of all the tests should be at least 2.0 (the mark of small tests may be max. 3 times 1).

Students must come to the practice in time:
If a student is late three times, it is equal with one missing.
If a student comes more than 20 minutes late, it is regarded as an absence.

FOG-MA161

DENTAL MATERIALS AND TECHNOLOGY

LECTURE

2015/2016, 1st semester, 2nd year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Tuesday 13.00-15.00 (2 hours/week)
Exam: Examination
Credit: 2

Date	Lecture	Lecturer
01. 09. 2015.	1. Introduction to dental materials science. Importance of dental material knowledge in dentistry. History of dental materials. International standards for materials used in dentistry (ISO, DIN etc.). Classification of dental materials based on structure and utilization	Dr. Kinga Turzó associate professor
08. 09. 2015.	2. Types, classifications and applications of impression materials Presentation of elastic impression materials	Dr. Nándor Práger assistant lecturer Attila Elekes, GC
15. 09. 2015.	3. Examining, treating and preventive methods used in dentistry from technological point of view Die materials and methods of model preparation	Dr. János Perényi head consultant Dr. István Pelsőczi-Kovács associate professor
22. 09. 2015.	4. Basic physical properties of materials. Test methods for materials in dental material science	Dr. Kinga Turzó
29. 09. 2015.	5. Polymers used in dentistry (1st part) Practical aspects of polymers used in dentistry (2nd part)	Prof. Dr. Zoltán Rakonczay professor Dr. Krisztina Ungvári assistant professor
06. 10. 2015.	6. Burs and polishing instruments in dentistry 1st WRITTEN TEST	Dr. Nándor Práger Dr. Zsolt Tóth senior research fellow and Dr. Krisztina Ungvári
13. 10. 2015.	7. Waxes. Occlusion papers and foils. Artificial teeth (acrylic and ceramic)	Dr. Diána Graca resident
20. 10. 2015.	8. Filling materials and adhesive technologies. Dental cements and endodontic materials	Dr. Emese Battancs assistant lecturer
27. 10. 2015.	9. Structure and properties of metals and alloys used in dentistry. Electroforming. Corrosion of metals	Dr. István Pelsőczi-Kovács
03. 11. 2015.	10. Investment, investment materials, metal casting. Processing of surfaces of dental appliances, polishing	Annamária Hódi dental technician
10. 11. 2015.	11. Amalgam. Allergic reactions to dental materials	Prof. Dr. Zoltán Rakonczay
17. 11. 2015.	12. 2nd WRITTEN TEST	Dr. Zsolt Tóth Dr. Krisztina Ungvári
24. 11. 2015.	13. Materials used for porcelain-fused-to-metal restorations. All-ceramic systems, composition, characteristics, processing	Dr. Nándor Práger
01. 12. 2015.	14. Course evaluation, correcting tests	Dr. Zsolt Tóth Dr. Krisztina Ungvári

Compulsory literature:
Dental Materials and Their Selection: Edited by W.J. O'Brien. Quintessence Publishing Co, Inc.
Presentations of the lectures.

Conditions of accepting the semester and the credits:

- Active participation on lectures and seminars, based on the study and exam regulations of the University and of the Faculty of Dentistry,
- Requirements of participation on lectures and seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry
- Method of proof of the absence on seminars and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry
- **It is mandatory the fulfillment of the DENTAL MATERIALS AND TECHNOLOGY PRACTICE requirements AND the fulfillment of the two *WRITTEN TESTS (1st and 2nd)*.**
  The average mark of the tests should be at least 2.0. Unsatisfactory test should be corrected; there is only ONE possibility for the correction at the end of the semester!
- **Absence from the written test can be accepted only if medical certification is presented.**
- **The mark of the Examination (Lectures) is established in the following way: if the average of the Written tests is between 4.0 and 5.0 then an offered mark can be given to the student.**
- **Calculation of the average: Sum of marks of ALL written tests/number of written tests. All marks of written tests count in the average.**
- If the average is between 4.00-4.49 then good (4) is given, if the average is between 4.50-5.00 then excellent (5) can be given. In case the average is below 4.0 the student will take an oral examination. An offered good (4) mark can be improved on the oral examination.

The final exam:

• the student pulls from the first and second half of the topics one-one item,
• there are 15 minutes for preparation. During preparation the students cannot use any tool (mobile phone, headset, etc.)
• From each themes an oral summary is given.
• For a successful exam it is required to meet at least sufficient/passed (2) knowledge of each topic.

FOG-MA162

DENTAL MATERIALS AND TECHNOLOGY

PRACTICE

2015/2016, 1st semester, 2nd year, Dental students
Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, Training Laboratory
Time: 2 hours/week
Dent 1 Thursday 14.00-16.00
Dent 2 Thursday 16.00-18.00
Exam: Term Mark
Credit: 2

Teacher: Dent 1: Dr. István Pelsőczi-Kovács associate professor
Dr. Roland Masa Ph.D student
Dr. Emese Battancs assistant lecturer (Dept. of Operative Dentistry)
Dent 2: Dr. Sándor Kisznyér assistant lecturer
Dr. Roland Masa
Dr. Emese Battancs

Date	Topics
03. 09. 2015.	1. Carving a premolar tooth in plaster (rose)
10. 09. 2015.	2. Carving upper central incisor in plaster (rose)
17. 09. 2015.	3. Carving a molar tooth in plaster (rose)
24. 09. 2015.	4. Impression materials in practice (impression gypsum products in practice, take impression from a coin, demonstration and use putty and wash materials
01. 10. 2015.	5. Making impression with alginate on manikin
08. 10. 2015.	6. Making impression with alginate on manikin, casting impression with gypsum. Basing the cast, five pointed trimming (half of the group)
15. 10. 2015.	7. Making impression with alginate on manikin, casting impression with gypsum. Basing the cast, five pointed trimming (half of the group)
22. 10. 2015.	8. Making impression with alginate on manikin, casting impression with gypsum. Basing the cast, five pointed trimming (half of the group)
29. 10. 2015.	9. Making impression with alginate on manikin, casting impression with gypsum. Basing the cast, five pointed trimming (half of the group)
05. 11. 2015.	10. Dental polymers in practice (Pattern resin, preparing different forms: cube and cone etc.)
12. 11. 2015.	11. The use of burs, cutting and polishing instruments
19. 11. 2015.	12. Waxes (bite registration on manikin, demonstration of waxes). Carving a central incisor and a molar in wax
26. 11. 2015.	13. Dental cements and filling materials in practice. Endodontic materials in practice (Dr. Emese Battancs)
03. 12. 2015.	14. Consultation and correcting test

Requirements for students

- Active participation on lectures and practices according to the Study and Exam Regulations of the University and the Faculty of Dentistry.
- Attendance of lectures and practices is mandatory.
- Completion of the tasks in the laboratory

- Keeping the Rules of students' activity in the Dept. of Prosthodontics, it can be read on the CooSpace.

Calculation of the Practice mark at the end of the semester:

The Practice of DENTAL MATERIALS AND TECHNOLOGY subject is evaluated based on the theoretical and practice knowledge of the student.
The mark is the average of all MTO's and the marks received for the practical tasks.

The theoretical knowledge will be evaluated by MTO's written during the practice.
A failed mark has to be improved during the semester; it may be corrected only once! The failed mark/s will be included in the calculation of the average.
If the student is absent at the time of the MTO and the retake is not successful there is no more chance to improve and the semester is regarded as failed.
If the average of all MTO's (including the failed ones) does not reach 2.0 and/ or a student fails all MTO's (including the retake of the MTO) during the semester, the semester will not be accepted - the semester can not be evaluated.

Evaluation of the practice part: marks received for the practical tasks in the Training Laboratory.

Consequences of coming late to the practice:
Students must come to the practice on time.
If a student is late three times, it is equal with one missing practice.
If a student comes more than 20 minutes late, it is regarded as an absence.

UNIVERSITAS SCIENTIARUM SZEGEDIENSIS
SZEGEDI TUDOMÁNYEGYETEM
Általános Orvostudományi Kar
MAGATARTÁSTUDOMÁNYI INTÉZET

Faculty of Medicine
DEPARTMENT OF BEHAVIOUR SCIENCES

ETHICS IN MEDICINE FOR DENTAL STUDENTS – FOG-MA130

Dentistry 2nd year – 2015/2016 1st semester

SUBJECT

Subject type	obligatory subject
Credit	2
Prerequiste	-
Semester	year: II. — fall: ☒ — spring: ☐
Subject description	One of the main objectives of the course is to highlight the inherently ethical nature of medical activity. Besides the clarification of the basic values of medical professionalism the course gives an insight into the most important ethical quandaries raised by modern technological medicine and biology. During the educational process the students acquire the methods of moral reasoning.
General aims of the subject	One of the aims of practical classes is to provide cognitive knowledge on the main ideas of moral philosophy, on the most important problems in biomedical ethics, and on the moral solutions being acceptable to these problems. The other aim of the classes is to develop the students' ability to use adequate moral reasoning and to pursue careful moral deliberation. Case studies, patients' stories can sensitise students to ethical problems occurring in medical settings and can give them experiences in the clarification and solution of ethical conflicts. Practical classes have a third objective too, it intends to influence and form the students' moral behaviour mainly by the help of confrontation with their own moral commitments.
Main topics	The meaning of ethics and its parts. The role of values in the regulation of human behaviour. The role of morality in the formation of traditional medical ethics. Deontological and utilitarian ethical theories. The birth of biomedical ethics and its four ethical principles. The doctrine of informed consent, the principle of respect for autonomy, the rights of the patient. Confidentiality, different perspectives of doctor-patient relationship. The ethical problems of organ and tissue transplantation. The ethical aspects of technological development in the field of human reproduction. The questions of abortion. Ethical issues of experimentation on humans and animals, moral quandaries posed by new genetics. Ethical decisions at the end of life: refusal/withdrawal of life saving and life sustaining treatments, alleviation of pain, physician assisted suicide, active euthanasia, hospice. The ethics of professional-professional relationship, the questions of medical consultation. Justice in healthcare, macro- and micro-allocation.
Course organizer	**Dr. Sándor Krémer** University of Szeged, Department of Philosophy 6722 Szeged, Petőfi S. sgt. 30-34. tel: 544-532, e-mail: alexanderkremer2000@yahoo.com
Conditions for accepting the subject	• Active participation on lectures and practices, based on the Study and Exam Regulations of the University. • Attendance of lectures and practices is mandatory. • Written test-exam for the theory mark and an assignment for the practice grade.

Recommended literature

- Lisa Schwartz, Paul E. Preece, Robert A. Hendry: *Medical Ethics – A Case-Based Approach*. WB Saunders, 2002.
- Ronald Munson: *Intervention and Reflection. Basic Issues in Medical Ethics* (Wadsworth Publishing Company, 2004)
- *World Medical Association* (WMA, http://www.wma.net/en/60about/index.html)
- *WMA Ethics Manual* (http://www.wma.net/e/ethicsunit/resources.htm)
- *WMA Policy* (http://www.wma.net/e/policy/b3.htm)
- *The Declaration of Geneva* (http://www.cirp.org/library/ethics/geneva/)
- *The Declaration of Helsinki* (http://www.fda.gov/oc/health/helsinki89.html)
- Kovács J.: *A modern orvosi etika alapjai. Bevezetés a bioetikába* (2. átdolgozott kiadás, Budapest: Medicina, 1999)

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ETHICS IN MEDICINE FOR DENTAL STUDENTS

Dentistry 2nd year – 2015/2016 1st semester

LECTURE – FOG-MA131

Number of lessons	14x1
Headcount / Groups	50
Place	**Issekutz Béla seminar room in Szent-Györgyi Albert Educational Building** 6722 Szeged, Dóm tér 13.
Time	**Wednesday, 8-10 a.m.**
Lecturer	**Dr. Sándor Krémer**

Schedule

1.	2-Sep-2015	Introduction, basic moral concepts
2.	9-Sep-2015	Morals and law, short history of ethics
3.	16-Sep-2015	Basic ethical theories and principles of bioethics
4.	23-Sep-2015	Health and illness, informed consent
5.	30-Sep-2015	Abortion
6.	7-Oct-2015	Aids
7.	14-Oct-2015	Euthanasia and suicide
8.	21-Oct-2015	Impaired infants
9.	28-Oct-2015	Animal experimentation
10.	4-Nov-2015	Cloning
11.	11-Nov-2015	Transplantation
12.	18-Nov-2015	Patients' rights
13.	25-Nov-2015	Justice in medicine and public health
14.	2-Dec-2015	Test

Requirements

- Participation at the lectures as per the general regulations.
- Written test-exam at the end of the semester

Assessment: examination

Credit: 1

Test-exam: **2-Dec-2015, 8 a.m.**
Issekutz Béla seminar room in Szent-Györgyi Albert Educational Building

ETHICS IN MEDICINE FOR DENTAL STUDENTS

Dentistry 2nd year – 2015/2016 1st semester

PRACTICE – FOG-MA132

Number of lessons	14x1
Headcount / Groups	50
Time and place	**Issekutz Béla seminar room in Szent-Györgyi Albert Educational Building Wednesday, 8-10 a.m.**
Teacher	**Dr. Sándor Krémer**

Topics of practice

Week 1.	Introduction, basic moral concepts
Week 2.	Morals and law, short history of ethics
Week 3.	Basic ethical theories and principles of bioethics
Week 4.	Health and illness, informed consent
Week 5.	Abortion
Week 6.	Aids
Week 7.	Euthanasia and suicide
Week 8.	Impaired infants
Week 9.	Animal experimentation
Week 10.	Cloning
Week 11.	Transplantation
Week 12.	Patients' rights
Week 13.	Justice in medicine and public health
Week 14.	Test

Requirements

- Participation at the practices as per the general regulations.
- For the practice grade you have to write an assignment.

Assessment: term mark (5)
Credit: 1

Essay

You have to write an assignment at home from one of the lecture topics.
Formal requirements:
3-5 A4 pages, 12 pt, 1.5 spacing, margins: 2.5 cm.
First page: name; year; group; title of subject; essay title.
Deadline: November 13th, 2015. The essay should be **uploaded** on Coospace.
Plagiarism will not be tolerated in this course.

September 2015. Szeged

FOG-MA061

INTRODUCTION TO DENTISTRY

LECTURE

2015/2016, 1st semester, 1st year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, Lecture Hall
Time: Monday 8.00-9.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Dátum	Cím	Előadó
31. 08. 2015.	1. Introducing the Faculty of Dentistry	Dr. Kinga Turzó associate professor
07. 09. 2015.	2. The History of Dentistry I. From the Ancient Times to the Middle Ages	Dr. Gábor Braunitzer assistant professor
14. 09. 2015.	3. The History of Dentistry II. The Renaissance and the Eary New Ages	Dr. Gábor Braunitzer
21. 09. 2015.	4. The History of Dentistry III. The Twentieth Century and the Latest Developments	Dr. Gábor Braunitzer
28. 09. 2015.	5. Areas of Clinical Dentistry VI.: Pediatric Dentistry	Dr. Krisztina Kenyeres assistant lecturer
05. 10. 2015.	6. Areas of Clinical Dentistry I.: Periodontology	Dr. Péter Vályi head consultant
12. 10. 2015.	Areas of Clinical Dentistry II.: Operative dentistry	Dr. Márk Antal assistant professor
19. 10. 2015.	8. Areas of Clinical Dentistry III.: Dentoalveolar surgery	Dr. Csaba Berkovits assistant professor
26. 10. 2015.	9. Areas of Clinical Dentistry IV.: Orthodontics	Dr. Emil Segatto associate professor
02. 11. 2015.	10. Areas of Clinical Dentistry V.: Prosthodontics	Dr. Zoltán Baráth associate professor
09. 11. 2015.	11. The Ethics and Responsibility of Being a Dentist. The Dental Practice.	Dr. Angyalka Segatto assistant lecturer
16. 11. 2015.	12. Dental Biomaterials and Materials Science	Dr. Kinga Turzó
23. 11. 2015.	13. The Dentist as Researcher. Doing Research as a Student and Becoming a Researcher	Dr. Gábor Braunitzer
30. 11. 2015.	14. Consultation	Dr. Gábor Braunitzer

Recommended literature:

- The end-semester written test is entirely based on the material covered in the lectures. Lecture slides are regularly uploaded to CooSpace.

Conditions of accepting the semester:

- Active participation, as per the Study and Exam Regulations of the University.
- Attendance is mandatory, but three classes may be missed with no consequence. Missing more than three classes is acceptable only on medical grounds (to be verified by a medical certificate within two weeks). Cases of vis maior are also valid reasons to miss a class, but verification is required (except for cases when the suddenly occurring

unfavorable condition is obvious to everybody, e.g. extreme weather conditions). If the student fails to verify his/her absence exceeding three classes, the semester cannot be accepted.

- Students must arrive in time: Being late three times below 20 minutes equals an absence. Being more than 20 minutes late is regarded as an absence.

End-semester grading:
At the end of the semester, the students write a test on the material of the lectures. The result of this test determines the end-semester grade. A failed test should be re-taken. Please note that only one re-take is possible.

FOG-MA062

INTRODUCTION TO DENTISTRY

PRACTICE

2015/2016, 1st semester, 1st year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, Lecture Hall
Time: Monday 9.00-10.00 (1 hour/week)
Exam: Term Mark
Credit: 1

Dátum	Cím	Előadó
31. 08. 2015.	1. Dentistry as a vocation	Dr. Emil Segatto associate professor
07. 09. 2015.	2. The place of dentistry within the health care system	Dr. Ildikó Pinke assistant professor
14. 09. 2015.	3. Dental prevention	Dr. Krisztina Kenyeres assistant lecturer
21. 09. 2015.	4. The proper techniques of tooth care	Dr. Krisztina Kenyeres
28. 09. 2015.	5. Additional methods in tooth care	Dr. Tünde Fodor assistant lecturer
05. 10. 2015.	6. Instruction and motivation	Dr. Tünde Fodor
12. 10. 2015.	7. The dental laboratory	Dr. Anette Stájer assistant professor
19. 10. 2015.	8. The surgery as a working environment. The practice of assistance 1.	Dr. Tünde Fodor
26. 10. 2015.	9. The practice of assistance 2.	Dr. Anette Stájer
02. 11. 2015.	10. The practical importance of biomaterials	Dr. Kinga Turzó associate professor
09. 11. 2015.	11. The methodology of basic research in dentistry	Prof. Dr. Zoltán Rakonczay professor
16. 11. 2015.	12. Introducing the research lab of the faculty	Dr. Krisztina Ungvári assistant professor
23. 11. 2015.	13. The methodology of clinical research in dentistry	Dr. Gábor Braunitzer assistant professor
30. 11. 2015.	14. Consultation	Dr. Emil Segatto

Conditions of semester acceptance:

- Active participation, as per the Study and Exam Regulations of the University.
- Attendance is mandatory, but three classes may be missed with no consequence. Missing more than three classes is acceptable only on medical grounds (to be verified by a medical certificate within two weeks). Cases of vis maior are also valid reasons to miss a class, but verification is required (except for cases when the suddenly occurring unfavorable condition is obvious to everybody, e.g. extreme weather conditions). If the student fails to verify his/her absence exceeding three classes, the semester cannot be accepted.
- Students must arrive in time: Being late three times below 20 minutes equals an absence. Being more than 20 minutes late is regarded as an absence.

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Faculty of Medicine
DEPARTMENT OF BEHAVIOUR SCIENCES

MEDICAL PSYCHOLOGY FOR DENTAL STUDENT – FOG-MA120

Dentistry 2nd year – 2015/2016 1st semester

SUBJECT

Subject type	compulsory subject
Credit	2
Prerequiste	Introduction to Medicine – FOG-MAC010 Communication in Dentistry – FOG-MAC020
Semester	year fall spring II. ☒ ☐
Subject description	Good dentist-patient communication is the basis of effective dental treatment. Throughout the course students acquire the ability to consider patients in a holistic way. Students will get familiar with the terms of dental and health psychology by structured communication activities and case studies.
General aims of the subject	The subject embraces several situations which reflect typical problems and dilemmas of dental practice. Theory: In the first part of every session a case (which represents these problems), the necessary theoretical background and concepts will be discussed. Practice: In the second half students are offered to acquire some communication skills, strategies via structured communication activities by which these situations can be solved.
Main topics	• The place of psychology in dentistry. Bio-psycho-social theory. Patient centered dentistry • Fear and anxiety in dentistry • Informing patients • Persuasive communication • Positive suggestions in dentistry • Dental psychosomatics. Psychiatric problems that affects dental work
Tutor	**Dr. Csaba Hamvai PhD** University of Szeged, Department of Behavioral Sciences 6722 Szeged, Szentháromság Str.5. tel: 62/420-530; e-mail: hamu80@gmail.com
Conditions for accepting the subject	• Participation at the lectures and practices as per the general regulations. • Passing a test at the end of the term
Recommended literature	• Compulsory material will be uploaded on coospace. • Gerry Kent, Mary Dalgleish: *Psychology and Medical Care*. London, 1996. Saunders

MEDICAL PSYCHOLOGY FOR DENTAL STUDENT

Dentistry 2nd year – 2015/2016 1st semester

LECTURE – FOG-MA121

Number of lessons	14x1
Headcount / Groups	50
Place	**Miskolczi Dezső seminar room, Baló József Education Center** Old Press Building, 6722 Szeged, Szikra Str. 8.
Time	**Tuesday, 10-12 a.m.**
Lecturer	**Dr. Csaba Hamvai –** Department of Behavioral Sciences tel: 62/420-530; e-mail: hamu80@gmail.com

Schedule

1.	1-Sep-2015	Complexity of dentist-patient encounters.
2.	8-Sep-2015	CLASS model
3.	15-Sep-2015	Factors that affect communication
4.	22-Sep-2015	Dental stress, fear and anxiety and their psychological management
5.	29-Sep-2015	Patient's motivational background and health beliefs
6.	6-Oct-2015	Persuasive communication and motivational interview in dentistry
7.	13-Oct-2015	Positive suggestions in dentistry
8.	20-Oct-2015	Delivering bad news
9.	27-Oct-2015	Conflicts with patients
10.	3-Nov-2015	Psychological aspects of pain
11.	10-Nov-2015	Dental psychosomatics
12.	17-Nov-2015	The helper's mental health: the burn-out problem.
13.	24-Nov-2015	Summary
14.	1-Dec-2015	Test

Requirements

- Participation at the lectures. NB: in this semester, one session can be skipped
- Theory mark: Passing a test at the end of the term.

Assessment	examination
Credit	1

Test-exam

1-Dec-2015
Miskolczi Dezső seminar room, Baló József Education Center
The test will include single choice, relation, definitions, problem solving. Material will be uploaded on coospace.

MEDICAL PSYCHOLOGY FOR DENTAL STUDENT

Dentistry 2nd year – 2015/2016 1st semester

PRACTICE – FOG-MA122

Number of lessons	14x1
Headcount / Groups	50 persons / 2 groups
Time and place	**Miskolczi Dezső seminar room, Baló József Education Center** **Tuesday, 10-12 a.m.**
Teacher	**Dr. Csaba Hamvai -** Department of Behavioral Sciences tel: 62/420-530; e-mail: hamu80@gmail.com

Topics of practice		**Group**
I.	Technical briefing	1-2.
II.	Complexity of dentist-patient encounters	2
III.	Stress , anxiety and fear management strategies	2
IV.	CLASS model	2
V.	Using transtheoretical model and motivational interview	2
VI.	Use of positive suggestions in dentistry, delivering bad news	2
VII.	Dealing with psychiatric and psychosomatic problems in dentistry	2
VIII.	Complexity of dentist-patient encounters	1
IX.	Stress , anxiety and fear management strategies	1
X.	CLASS model	1
XI.	Using transtheoretical model and motivational interview	1
XII.	Use of positive suggestions in dentistry, delivering bad news	1
XIII.	Dealing with psychiatric and psychosomatic problems in dentistry	1
XIV.	Test	1-2.

Methods

- Video analysis
- Case studies (with structured tasks)
- Discussion of theoretical concepts and terms

Requirements

- Participation at the practices. NB: in this semester, one session can be skipped
- Practice mark: mark will be offered according to the students' activity during the classes. Additional bonuses can be gained by optional homework.

Assessment: term mark (5)

Credit: 1

September 2015. Szeged

Medical Sociology

Course code: FOG –MA141
Type: lecture
Hours per week: 1
Type of exam: examination
Credits: 1 credit point
Semester: 4th
Precondition of the course: -

Aim of the education
In the course, the students become familiar with the social background of the processes of health preservation and diseases – particularly for dental diseases-, the sociological dimensions of medical therapy and health care system as well as the social system of conditions of the operation of health care institutions.

Main topics
Sociology. Sociology of dentistry.
Professional socialisation.
Illness behaviour.
Social strucrure.
Social inequalities and health.
Deviant behaviours.
Labelling.

Study requirements
Medical Sociology is the study of the social context of health and disease, the influence of social and cultural phenomena on sickness and effectiveness of medical care and organization. In the course of training students study the social background of the processes of health promotion and diseases, the sociological dimensions of medical therapy and health care system as well as the sociological system of conditions of the operation of health care institutions.
Medical sociology is taught by lectures.
The participation at lectures is compulsory (Faculty of Dentistry, Faculty Code of Study Regulations, 8.1.2). The number of absences must not exceed 25% of the total number of lectures. The presence of students will be checked by attendance lists. The written exam will include information given at the lectures.
The semester ends with a written exam.

Knowledge required
Written materials given by the Department during the semester.

Recommended books
David Armstrong: Outline of Sociology as Applied to Medicine. Butterworth-Heinemann Ltd., London 2003.
William C. Cockerman: Medical Sociology. Prentice-Hall, Inc. New Jersey, 1992.
Anthony Giddens: Sociology. 6th ed. 2009.

Contitions of signing the semester
The number of absences must not exceed 25% of the total number of practicals.

Lectures

1-2. lectures: Definition of sociology and medical sociology. Role of medical sociology in medical education. The sociology of dentistry**.**

3-4. lectures: Socialisation. Professional socialisation.

5-6. lectures: Doctor-patient interaction, models of the doctor-patient relationship

7-8. lectures: Going to the doctor. Illness behaviour. The dental anxiety.

9-10. lectures Social structure. Social causes of illness, social patterns of illness (social aetiology of disease).

11-12. lectures: Social inequalities and health. Poverty.

13-14. lectures: Deviant behaviours. Sociological theories of deviance. Labelling and stigma

FOG-MA151

ORAL BIOLOGY

LECTURE

2015/2016, 2nd semester, 2nd year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building A, Lecture Hall
Time: Monday 9.00-11.00 (2 hours/week)
Exam: Examination
Credit: 2

Date	Lecture	Lecturer
01. 02. 2016.	1. The chemical composition of bone and teeth	Prof. Dr. János Minárovits professor
08. 02. 2016.	2. Formation and mineralization of hard tissues. Trace elements in teeth	Prof. Dr. János Minárovits
15. 02. 2016.	3. The microstructure of teeth. The enamel, the dentine and the cementum	Prof. Dr. Zoltán Rakonczay professor emeritus
22. 02. 2016.	4. The periodontium	Dr. Péter Vályi assistant professor
29. 02. 2016.	5. The mastication, the deglutition and the speech	Prof. Dr. Zoltán Rakonczay
07. 03. 2016.	6. Measurement of the masticator force	Dr. István Pelsőczi-Kovács associate professor
21. 03. 2016.	7. The dental pulp	Prof. Dr. János Minárovits
04. 04. 2016.	8. The biochemistry of fluoride ion. The pharmacology and the toxicology of the fluoride ion. The detrimental effects of fluoride on teeth	Prof. Dr. Zoltán Rakonczay
11. 04. 2016.	9. Dentin sensitivity	Prof. Dr. Zoltán Rakonczay
18. 04. 2016.	10. The taste and the olfaction	Prof. Dr. János Minárovits
25. 04. 2016.	11. The microbial flora of the mouth in health and diseases	Dr. Edit Urbán associate professor (Institute of Clinical Microbiology)
02. 05. 2016.	12. The saliva and the salivary glands	Prof. Dr. János Minárovits
09. 05. 2016.	13. The calcium metabolism of bones and teeth	Prof. Dr. Zoltán Rakonczay

Recommended literature:
Oral Biology. By G.G. Jansen van Rensurg, 1995. Quintessence Publ. Co, Inc. ISBN 0-86715-271-0;
Oral bioscience. David B. Ferguson, 1999, Churchill Livingstone, ISBN 0-433 05373 1.

Conditions for accepting the semester

1. Active participation on lectures and seminars, based on the study and exam regulations of the University and of the Faculty of Dentistry.
2. Requirements of participation on lectures and seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.
3. Method of proof of the absence on seminars and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
4. The precondition of the exam is the fulfillment of the Seminar.

FOG-MA152

ORAL BIOLOGY

SEMINAR

2015/2016, 2nd semester, 2nd year, Dental students

Spring semester: 1 February – 14 May 2016

Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building A, Lecture Hall
Time: Monday 11.00-12.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Topics	Teacher
01. 02. 2016.	1. The chemical composition of bone and teeth	Prof. Dr. János Minárovits professor
08. 02. 2016.	2. The bone and teeth mineralization. The trace elements in the teeth	Prof. Dr. János Minárovits
15. 02. 2016.	3. Microstructure of teeth (light microscopy)	Prof. Dr. Zoltán Rakonczay professor emeritus
22. 02. 2016.	4. Caries prevention	Prof. Dr. Zoltán Rakonczay
29. 02. 2016.	5. Demonstration I.	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay
07. 03. 2016.	6. Temporomandibular joint	Dr. István Pelsőczi-Kovács
21. 03. 2016.	7. Research methods in dentistry	Dr. Kinga Turzó associate professor
04. 04. 2016.	8. Literature search	Dr. Kinga Turzó
11. 04. 2016.	9. Interactions between teeth and dental materials	Dr. Krisztina Ungvári assistant professor
18. 04. 2016.	10. Demonstration II.	Prof. Dr. János Minárovits Prof. Dr. Zoltán Rakonczay
25. 04. 2016.	11. Dental materials – in vitro investigations	Dr. Krisztina Ungvári
02. 05. 2016.	12. The saliva and the salivary glands. Salivary diagnostics	Prof. Dr. János Minárovits
09. 05. 2016.	13. The calcium metabolism of bones and teeth	Prof. Dr. Zoltán Rakonczay

Conditions for accepting the semester

1. Active participation on lectures and seminars, based on the study and exam regulations of the University and of the Faculty of Dentistry.
2. Requirements of participation on lectures and seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.
3. Method of proof of the absence on seminars and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
4. It is mandatory the fulfillment of the ***WRITTEN TESTS (1st and 2nd)***. The average mark of the tests should be at least 2.0. Unsatisfactory test should be corrected; there is only ONE possibility for the correction during the semester! The date of this correction Test is given by the responsible of the subject.

FOG-MA081

PHYSICS FOR DENTAL STUDENTS I.

LECTURE

2015/2016, 1st semester, 1st year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Wednesday 9.00-11.00 (2 hours/week)
Exam: Examination
Credit: 2

Date	Lecture	Lecturer
02. 09. 2015.	1. The history and subject of biophysics. The mathematical basis for physics, SI units	Dr. Zsolt Tóth senior research fellow
09. 09. 2015.	2. Flow of liquids and gases (flow of ideal and real fluids, laminar and turbulent flow, the properties of blood flow)	Dr. Kinga Turzó associate professor
16. 09. 2015.	3. Motion of molecules, diffusion, osmosis	Dr. Kinga Turzó
23. 09. 2015.	4. Transport processes through biological membranes (mechanisms of transport, passive and mediated diffusion, active transport)	Dr. Kinga Turzó
30. 09. 2015.	5. Membrane potentials and their origin. Diffusion potential. Experimental methods for determination of membrane potentials. Phenomenology and molecular description of action potentials (Na^+/K^+ ion pumps)	Dr. Kinga Turzó
07. 10. 2015.	6. Flow of heat (conduction, convection, radiation) melting and evaporation. Thermal properties of teeth and materials used in dentistry	Dr. Zsolt Tóth
14. 10. 2015.	7. Transport by radiations: particle and electromagnetic radiation. Electromagnetic spectra, reflection, absorption, scattering	Dr. Zsolt Tóth
21. 10. 2015.	8. Energy levels in atoms and molecules, Jablonski diagram. Luminescence: fluorescence and phosphorescence. Luminescence in spectroscopy and microscopy. Medical and dental applications	Dr. Zsolt Tóth
28. 10. 2015.	9. Lasers and their applications in dentistry	Dr. Zsolt Tóth
04. 11. 2015.	10. Ultrasonic imaging, Doppler methods	Dr. Kinga Turzó
11. 11. 2015.	11. X-rays: production, spectra, interaction with matter. Physical basics of X-ray imaging and computer tomography (CT)	Dr. Zsolt Tóth
18. 11. 2015.	12. Nuclear radiations: principles of radioactive decay and radioisotopes. Diagnostical and therapeutical applications	Dr. Zsolt Tóth
25. 11. 2015.	13. Dosimetry: units and instruments measuring dose. Protection from radiation. Dose dependence of radiation effects. Factors determining the effect of radiation	Dr. Kinga Turzó
02. 12. 2015.	14. Summary and consultation	Dr. Kinga Turzó

Recommended literature:

1. J.W. Kane and M.M. Sternheim: Physics, 3rd edition, John Wiley, 1988
2. Z. Csernátony, S. Damjanovich, J. Fidy, J. Szöllősi (eds.): Medical Biophysics. 3., rev. ed. Budapest: Medicina, 2009. 667 p.

Conditions of accepting the semester and the credits:

- Active participation on lectures and seminars, based on the study and exam regulations of the University and of the Faculty of Dentistry.
- Requirements of participation on lectures and seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.
- Method of proof of the absence on seminars and lectures based on the study and exam regulations of the University and of the Faculty of Dentistry.
- The precondition of the exam: fulfillment of Physics for dental students I. seminar.
- It is mandatory the fulfillment of the ***WRITTEN TESTS (1st and 2nd)***. The average mark of the tests should be at least 2.0. Unsatisfactory test should be corrected; there is only ONE possibility for the correction at the end of the semester!
- **Absence from the written test can be accepted only if medical certification is presented.**
- **The mark of the Examination (Lectures) is established in the following way: if the average of the Written tests is between 4.0 and 5.0 then an offered mark can be given to the student.**
- **Calculation of the average: Sum of marks of ALL written tests/number of written tests. All marks of written tests count in the average.**
- If the average is between 4.00-4.49 then good (4) is given, if the average is between 4.50-5.00 then excellent (5) can be given. In case the average is below 4.0 the student will take an oral examination. An offered good (4) mark can be improved on the oral examination.

The final exam:

- The student pulls from the first and second half of the topics one-one item,
- there are 15 minutes for preparation. During preparation the students cannot use any tool (mobile phone, headset, etc.).
- From each themes an oral summary is given.
- For a successful exam it is required to meet at least sufficient/passed (2) knowledge of each topic.

FOG-MA082

PHYSICS FOR DENTAL STUDENTS I.

SEMINAR

2015/2016, 1st semester, 1st year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Wednesday 8.00-9.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Topics	Teacher
02. 09. 2015.	1. Relation between physical properties and their time dependence. Drawing graphs, slopes and characteristics of a curve. Vectors	Dr. Zsolt Tóth senior research fellow
09. 09. 2015.	2. Basic laws of physics, basic and derived properties	Dr. Zsolt Tóth
16. 09. 2015.	3. Dental and medical implications of flow of liquids and gases	Dr. Zsolt Tóth
23. 09. 2015.	4. Movement of molecules in liquids and gases	Dr. Zsolt Tóth
30. 09. 2015.	5. Passive and active transport processes. Membrane potential: medical and dental implications	Dr. Zsolt Tóth
07. 10. 2015.	6. WRITTEN TEST (1.)	Dr. Zsolt Tóth
14. 10. 2015.	7. Thermodynamic properties of teeth and dental materials	Dr. Zsolt Tóth
21. 10. 2015.	8. Radiation and luminescence in dentistry	Dr. Zsolt Tóth
28. 10. 2015.	9. Laser applications in dentistry	Dr. Zsolt Tóth
04. 11. 2015.	10. Dental implications of ultrasound	Dr. Zsolt Tóth
11. 11. 2015.	11. Dental usage of X-ray based imaging and nuclear radiations	Dr. Zsolt Tóth
18. 11. 2015.	12. WRITTEN TEST (2.)	Dr. Zsolt Tóth
25. 11. 2015.	13. Dosimetry in dentistry	Dr. Zsolt Tóth
02. 12. 2015.	14. Consultation, additional or replacement WRITTEN TEST	Dr. Zsolt Tóth

Recommended literature:

1. J.W. Kane and M.M. Sternheim: Physics, 3rd edition, John Wiley, 1988
2. Z. Csernátony, S. Damjanovich, J. Fidy, J. Szöllősi (eds.): Medical Biophysics. 3., rev. ed. Budapest: Medicina, 2009. 667 p.

Conditions of accepting the semester (Seminar):

- Active participation on the seminars based on the study and exam regulations of the Faculty of Dentistry.
- Requirements of participation seminars and replacement of absenteeism based on the study and exam regulations of the Faculty of Dentistry.
- Method of proof of the absence on seminars based on the study and exam regulations of the University and of the Faculty of Dentistry.
- The students at the beginning of the semester will get a seminar subject. They prepare an eight - ten slide PowerPoint presentation. The presentation is followed by a discussion

regarding the presented topic. The evaluation of the presentation considers the students' opinions.

- **The Seminar is fulfilled only if the student writes both Written tests and their mark is at least passed (2) and she/he presented a seminar subject. There is only ONE possibility for correction at the end of the semester!**
- **The evaluation of the seminar is calculated from the average of the mark of the student presentation and all Written tests (including the failed ones).**
- Grades: excellent (5): 4.50-5.00; good (4): 3.50-4.49; accepted (3): 2.50-3.49; passed (2): 1.50-2.49; failed (1): 0-1.49.

FOG-MA083

PHYSICS FOR DENTAL STUDENTS II.

LECTURE

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, Yellow Room
Time: Thursday 9.00-11.00 (2 hours/week)
Exam: Examination
Credit: 2

Date	Lecture	Lecturer
04. 02. 2016.	1. Structure of materials. Basic states of substances, interactions between atoms and molecules, bonds. Classes of materials.	Dr. Zsolt Tóth senior research fellow
11. 02. 2016.	2. States of materials (solid, liquid, gas). Gas state. Interpretation of temperature. Boltzmann-distribution. Liquid state. Newton's law of friction, Newtonian and non-Newtonian liquids.	Dr. Zsolt Tóth
18. 02. 2016.	3. Solid state. Phases, phase diagram, phase transformation.	Dr. Zsolt Tóth
25. 02. 2016.	4. Surface properties of materials. Interface phenomena and energetical conditions of interfaces (surface tension, surface energy, etc.).	Dr. Kinga Turzó associate professor
03. 03. 2016.	5. Structure and surface investigation methods. Optical, electron and scanning probe microscopes. Microscopic investigations of surfaces relevant in dentistry.	Dr. Zsolt Tóth
10. 03. 2016.	6. Crystallization. Metals, structure of metallic alloys. Corrosion, material degradation.	Dr. Zsolt Tóth
17. 03. 2016.	7. Structure of ceramics	Dr. Kinga Turzó
24. 03. 2016.	8. Structure of polymers and composites.	Dr. Kinga Turzó
07. 04. 2016.	9. Mechanical properties I.: elastic behavior. Physical basis of orthodontics	Dr. Zsolt Tóth
14. 04. 2016.	10. Mechanical properties II.: plastic behavior and hardness. Fracture, fatigue.	Dr. Zsolt Tóth
21. 04. 2016.	11. Mechanical properties III.: rheological features, viscoelasticity, creep, shape relaxation.	Dr. Zsolt Tóth
28. 04. 2016.	12. Electrical, thermal and optical properties of materials used in dentistry.	Dr. Kinga Turzó
05. 05. 2016.	13. Comparison of the mechanical properties of dental materials and biological tissues (bone, teeth, gingiva).	Dr. Kinga Turzó
12. 05. 2016.	14. Consultation.	Dr. Kinga Turzó

Textbook of the course:

1. Ferenc Tölgyesi, István Derka, Károly Módos: Physical Bases of Dental Material Science e-book.

Recommended literature:

1 O'Brien, W.J. Dental Materials and Their Selection, 3. ed. Quintessence, ISBN 0-86715-406-3, 2002
2. K.J. Anusavice: Phillips' Science of Dental Materials (11th ed), B. Saunders Company, ISBN 0-7216-9387-3, Philadelphia, Pennsylvania, USA, 2003

Conditions of accepting the semester and the credits:

- Active participation on lectures, based on the Faculty Academic Regulations of the Faculty of Dentistry (point 8.1.2).
- Method of proof of the absence on lectures and exams based on the study and exam regulations of the Faculty Academic Regulations (points 8.1.5-8.1.7).
- The precondition of the exam: fulfillment of courses: Physics for dental students I.
- The students write two WRITTEN TESTS at the seminar during the semester. It is mandatory the fulfillment of both (1st and 2nd) TESTS. If any TEST result is below 50%, it should be corrected. There is only ONE possibility for the correction at the end of the semester! If the correction fails, than the student is not allowed to enter the final exam.
- Absence on the written test can be accepted only if medical certification is presented.
- The mark of the Examination (Lectures) is established in the following way: the result of the TESTS is given by the ratio of the sum of the reaced points and the sum of mamimum points. If the result falls between 75% and 87% good (4), above 88% excellent (5) offered mark can be given to the student. If the result falls between 50% and 74% than the student takes oral exam in the examination period. An offered good (4) mark can be improved on the oral exam.

The final exam:

• the student pulls from the first and second half of the topics one-one item,
• there are 15 minutes for preparation. During preparation the students cannot use any tool (mobile phone, headset, etc.).
• From each themes an oral summary is given.
• For a succesful exam it is required to meet at least sufficient/passed (2) knowledge of each topic.

FOG-MA084

PHYSICS FOR DENTAL STUDENTS II.

SEMINAR

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, Yellow Room
Time: Thursday 8.00-9.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Topics	Teacher
04. 02. 2016.	1 Importance of material science in dentistry. Introduction to solve physical problems.	Dr. Zsolt Tóth senior research fellow
11. 02. 2016.	2. Bonds between atoms and molecules. Structure of dental materials. States of materials (solid, liquid, gas).	Dr. Zsolt Tóth
18. 02. 2016.	3. The role of temperature in dentistry. Phase diagram, phase transformation. Boltzmann-distribution.	Dr. Zsolt Tóth
25. 02. 2016.	4. Newton's law of friction, Newtonian and non-Newtonian liquids.	Dr. Zsolt Tóth
03. 03. 2016.	5. Surface and interface properties of materials. Surface tension, surface energy.	Dr. Zsolt Tóth
10. 03. 2016.	6. **WRITTEN TEST (1.)**	Dr. Zsolt Tóth
17. 03. 2016.	7. Optical microscopy, electron microscopy and scanning probe microscopy for dental investigations.	Dr. Zsolt Tóth
24. 03. 2016.	8. Crystalline structure of metals, and dental alloys. Structure of ceramics, polymers, composites, used in dentistry.	Dr. Zsolt Tóth
07. 04. 2016.	9. Mechanical properties of materials in the praxis of dentist I: elastic and plastic behavior, fracture, fatigue, hardness.	Dr. Zsolt Tóth
14. 04. 2016.	10. Mechanical properties of materials in the praxis of dentist II: Rheological feature, viscoelasticity, creep, shape relaxation.	Dr. Zsolt Tóth
21. 04. 2016.	11. Electrical, thermal and optical properties of teeth and dental materials.	Dr. Zsolt Tóth
28. 04. 2016.	12. **WRITTEN TEST (2.)**	Dr. Zsolt Tóth
05. 05. 2016.	13. Additional or replacement WRITTEN TEST	Dr. Zsolt Tóth
12. 05. 2016.	14. Consultation.	Dr. Zsolt Tóth

Textbook and tasks:

1. Ferenc Tölgyesi, István Derka, Károly Módos: Physical Bases of Dental Material Science e-book

Recommended literature:

1. O'Brien, W.J. Dental Materials and Their Selection, 3. ed. Quintessence, ISBN 0-86715-406-3, 2002

2. K.J. Anusavice: Phillips' Science of Dental Materials (11th ed), B. Saunders Company, ISBN 0-7216-9387-3, Philadelphia, Pennsylvania, USA, 2003

Requirements of signing the Seminar:

- Active participation on seminars, based on the Faculty Academic Regulations of the Faculty of Dentistry (point 8.1.2).
- Requirements of participation seminars and replacement of absenteeism based on the Faculty Academic Regulations (points 8.1.5-8.1.7).
- Method of proof of the absence on seminars based on the Faculty Academic Regulations of the Faculty of Dentistry (points 8.1.5-8.1.7).
- The students at the beginning of the semester will get a seminar subject and a task to be solved. They prepare a five - ten-slide PowerPoint STUDENT PRESENTATION, which includes the main steps of the solution of the task. The slides have to be uploaded to the announced coospace area. The presentation is followed by a discussion regarding the presented topic. In the assessment points are given for: keeping the deadline of uploading the presentation, form and professional content of the presentation slides, presentation style and content of the talk, presentation "how to solve the calculation problem, the correctness of the calculation result and for the discussin skills.
- Absence from the presentation can be accepted only if medical certification is presented.
- The Seminar is fulfilled only if the student presented a seminar subject and writes both WRITTEN TESTS and their result is higher than 50%. There is only ONE possibility for correction at the end of the semester!
- The evaluation of the seminar is calculated from the summed points of the STUDENT PRESENTATION and all WRITTEN TESTS (including the failed ones, too).
- Grades:

  excellent (5): 88% - 100%;
  good (4): 75% - 87%;
  accepted (3): 63% - 74%;
  passed (2): 50% - 62%;
  failed (1): 0% - 49%.

FOG-MA181

PRECLINICAL COURSE OF OPERATIVE DENTISTRY I.

LECTURE

2015/2016, 2nd semester, 2nd year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, Yellow Room
Time: Monday 8.00-9.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Lecture	Lecturer
01. 02. 2016.	1. Anatomy and histology of tooth – enamel, dentine and cementum	Dr. Márk Antal assistant professor
08. 02. 2016.	2. Caries (etiology, classification, development, histology)	Dr. Zsolt Zalai assistant lecturer
15. 02. 2016.	3. Instruments of operative dentistry	Dr. Zsolt Zalai
22. 02. 2016.	4. Cavity preparation according to Black	Dr. Balázs Szabó assistant lecturer
29. 02. 2016.	5. Diagnostics in cariology	Dr. Zsolt Zalai
07. 03. 2016.	6. Reaction of the pulp on harmful effects	Dr. Zsolt Zalai
21. 03. 2016.	7. Cements	Dr. Zsolt Zalai
04. 04. 2016.	8. GIC, compomer	Dr. Zsolt Zalai
11. 04. 2016.	9. Amalgam	Dr. Helga Füzesi dentist
18. 04. 2016.	10. Basics of adhesive systems	Dr. Márk Fráter assistant lecturer
25. 04. 2016.	11. Composite	Dr. Márk Antal
02. 05. 2016.	12. Minimally invasive cavity preparation (adhesive cavity, sonic preparation, air abrasion, tunnel, slot)	Dr. Márk Antal
09. 05. 2016.	13. Consultation	Dr. Zsolt Zalai

Recommended literature:
Summit J.B. et al. Fundamentals of Operative Dentistry, Quintessence Publ. Inc. 2006.

Conditions of accepting the semester:

- Attending the lectures is compulsory which is checked by using attendance register.
- In accordance with the Study and Examination Regulation of the Faculty of Dentistry the semester can't be accepted if a student misses more than 25% of the lectures.
- Late, absence: If a student is more than 15 minutes late, it counts as an absence. If the number of absences is more than 25% of the number of lectures in the semester, the course can not be accepted. If a student is late three times but none of them exceed 15 minutes these three times equals one absence.
- There will be two written midterm exam, one in the 7th and another one in the 12th week on an agreed date. The grade is calculated as an average of the two written examinations. The final grade can be corrected in the examination period according to the relevant paragraphs of the Study and Examination Regulation.

FOG-MA182

PRECLINICAL COURSE OF OPERATIVE DENTISTRY I.

PRACTICE

2015/2016, 2nd semester, 2nd year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building A, Training Laboratory
Time: 3 hours/week
Dent 1: Thursday 17.00-20.00
Dent 2: Tuesday 14.30-17.00
Exam: Term Mark
Credit: 3

Teaching staff: Dr. Márk Antal assistant professor
Dr. Balázs Szabó assistant lecturer

Date	Practice
02. 02. 2016. 04. 02. 2016.	1. Introduction, instruments of restorative dentistry
09. 02. 2016. 11. 02. 2016.	2. Tooth anatomy, sculpting the occlusal surface of posterior teeth#1
16. 02. 2016. 18. 02. 2016.	3. Tooth anatomy, sculpting the occlusal surface of posterior teeth #2
23. 02. 2016. 25. 02. 2016.	4. Black I. and II. cavity preparation
01. 03. 2016. 03. 03. 2016.	5. Black III. and V. cavity preparation
08. 03. 2016. 10. 03. 2016.	6. Black I. and II. cavity preparation in phantom head
17. 03. 2016.	7. Black I. and II. cavity preparation in phantom head - **Practical exam**
22. 03. 2016. 24. 03. 2016.	8. Black III. and V. cavity preparation in phantom head
05. 04. 2016. 07. 04. 2016.	9. Black III. and V. cavity preparation in phantom head
12. 04. 2016. 14. 04. 2016.	10. Rubber dam isolation (theoretical lecture and demonstration for small groups by the practice leaders)
19. 04. 2016. 21. 04. 2016.	11. Black I.,II. cavity preparation and filling with amalgam
26. 04. 2016. 28. 04. 2016.	12. Black I.,II. cavity preparation and filling with composite
03. 05. 2016. 05. 05. 2016.	13. **Practical exam-**Black cavity preparation in phantom head
10. 05. 2016. 12. 05. 2016.	14. Consultation

Recommended literature:
Summit J.B. et al. Fundamentals of Operative Dentistry, Quintessence Publ. Inc. 2006.

Conditions of accepting the semester:

- Attending the practices is compulsory.
- In accordance with the Study and Examination Regulation of the Faculty of the Dentistry if the number of absences is more than 25 % of the number of lectures in the semester, the course can not be accepted.
- If a student misses between 15-25 % of the practices because of medical reasons supported by medical documents a make up for the missed ones is compulsory. The appointment for the make up must be arranged with the practice leader and the head of the department within 8 days following the absence. If it does not happen the absence is considered as not approved.
- Late, absences: if a student is more than 15 minutes late, it is regarded as an absence. If a student is late three times but none of them exceed 15 minutes these three times equals one absence. Attendance, absence is checked by using attendance register.
- During the practice all the practical related theoretical knowledge detailed in the study plan will be evaluated as well.
- The calculation of the grades at the end of the semester: it comes as an average of the grades given in the practices during semester (where both practical and practical related theoretical knowledge as seen in the study plan will be evaluated) and the grades of two midterm practical exam works where the grade of the two midterm practical exam works will be multiplied threefold.

FOG-MA191

PRECLINICAL COURSE OF PROSTHODONTICS I.

LECTURE

2015/2016, 2nd semester, 2nd year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, Yellow Room
Time: Tuesday 8.00-9.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Lecture	Lecturer
09. 02. 2016.*	1. Topics of prosthodontics. Prosthetic appliances. Main principles of tooth preparation. 2. Tools and methods of tooth preparation. Veneer crowns. How to avoid the harmful effects of tooth preparation	Dr. Krisztina Kárpáti assistant lecturer
16. 02. 2016.	3. Classification of crowns. Types and indications of different finish lines	Dr. János Perényi head consultant
23. 02. 2016.	4. Partial crowns. Preparation of ¾ and 4/5 crown	Dr. János Perényi
01. 03. 2016.	5. Abutment pulp protection. Provisional restoration.	Dr. János Perényi
08. 03. 2016.	6. Impression methods	Dr. Nándor Práger assistant lecturer
22. 03. 2016.	7. Types of tooth preparation and their indications I.	Dr. Zoltán Baráth associate professor
05. 04. 2016.	8. Types of tooth preparation and their indications II.	Dr. Zoltán Baráth
12. 04. 2016.	9. Types of tooth preparation and their indications III.	Dr. Nándor Práger
19. 04. 2016.	10. Types of tooth preparation and their indications IV.	Dr. Nándor Práger
26. 04. 2016.	11. The CAD-CAM system. Digital impression	Dr. Nándor Práger
03. 05. 2016.	12. Laboratory procedures. Model preparation	Dr. István Pelsőczi-Kovács associate professor
10. 05. 2016.	13. WRITTEN TEST	Dr. Nándor Práger

*** The first two lectures will be held on 9 February 2016 from 8 to 9 am. in Building B, Yellow Room en bloc, therefore there is no lecture on 2 February 2016!**

Compulsory literature:

Shillingburg HT, Jacobi R, Brackett SE: Fundamentals of Tooth Preparation. Quintessence, 2nd printing, ISBN 0-86715-157-9

SF Rosenstiel, MF Land, J Fujimoto: Contemporary Fixed Prosthodontics, 2001, 3rd ed., ISBN 0-8151-5559-X

FOG-MA192

PRECLINICAL COURSE OF PROSTHODONTICS I.

PRACTICE

2015/2016, 2nd semester, 2nd year, Dental students

Spring semester: 1 February – 14 May 2016

Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building A, Training Laboratory

Time: 2 hours/week

Dent 1: Friday 12.30-14.00

Dent 2: Friday 14.00-15.30

Exam: Term Mark

Credit: 2

Teaching staff: Dent 1: Dr. Krisztina Ungvári assistant professor

Dent 2: Dr. Krisztina Ungvári assistant professor

Date	Practice
05. 02. 2016.	1. Introduction the order of the laboratory, instruments. Practicing the use of burs.
12. 02. 2016.	2. Preparation of resin teeth for veneer crown, knife edge finish line
19. 02. 2016.	3. Preparation of resin teeth for veneer crown, knife edge finish line
26. 02. 2016.	4. Preparation of embedded resin teeth for veneer crown, chamfer finish line
04. 03. 2016.	5. Preparation of resin teeth for veneer crown
11. 03. 2016.	6. Preparation of resin teeth for veneer crown
18. 03. 2016.	7. Preparation of resin teeth (front), chamfer finish line
25. 03. 2016.	8. Preparation of resin teeth in the manikin, chamfer finish line
08. 04. 2016.	9. Preparation of resin teeth in the manikin, chamfer finish line
15. 04. 2016.	10. Preparation of resin teeth in the manikin, chamfer finish line
22. 04. 2016.	11. Preparation of resin teeth in the manikin, chamfer finish line
29. 04. 2016.	12. Preparation of resin teeth in the manikin, chamfer finish line
13. 05. 2016.	13. Practical exam

Requirements:

- Essential theoretical knowledge
- At the end of semester, the student must prepare an exam work task.

Requirements for students:

- Active participation on lectures and practices according to the Study and Exam Regulations of the University and the Faculty of Dentistry.
- Attendance of lectures and practices is mandatory.
- Completion of the tasks in the laboratory.
- Keeping the Rules of students' activity in the Dept. of Prosthodontics, it can be read on the CooSpace.

Calculation of mark at the end of the semester

Theory: evaluation (5)
The mark is the MTO-s grade. A failed mark has to be improved during the semester; it may be corrected only once! The failed mark/s will be included in the calculation of the average.

If the average of all MTO's (including the failed ones) does not reach 2.0, the end semester mark is failed, but can be corrected in the exam period according to the Study and Exam Regulations of the University and the Faculty of Dentistry.

If the student is absent at the time of the MTO and the retake is not successful there is no more chance to improve and the semester is regarded as failed.

Practice: term mark (5)
- Exam work. The evaluation is carried out by a qualified dentist of the Prosthodontics Department, who was not involved in the practice during the semester. The mark is weighted.
- The marks received for the practical tasks in the Training Laboratory. The first five weeks is grace period; marks will be given from the sixth week. (6 marks total for the practical tasks)
- Evaluation of essential theoretical knowledge (4 tests)
The average of the marks must be 2.0
Consequences of coming late to the practice:
Students must come to the practice on time.
If a student is late three times, it is equal with one missing practice.
If a student comes more than 20 minutes late, it is regarded as an absence.
Retake of one practice is possible in case of the student's absence is verified according to the Study and Exam Regulations of the University and the Faculty of Dentistry. The head of the department can authorize the retake practice.

FOG-MA201

NURSING PRACTICE

(Summer practice)

2015/2016, 2nd semester, 1st year, Dental students

Place: Faculty of Dentistry, Emergency Ambulance

Students may perform the emergency ambulance practice out of the University (in their country) at a dental emergency ambulance. In this case they have to submit an acceptance letter from the head of the chosen surgery. Students have to submit a certificate about the practice, containing a short evaluation.

Time: 2 x 35 hours (dental emergency ambulance) in July and August according to the group arrangement.

Exam: Signature

Credit: 0

Supervisors: Dr. Csaba Berkovits assistant professor (40 %)
Dr. Gábor Decsi assistant lecturer (30 %)
Dr. Éva Zsótér assistant lecturer (30 %)
Deputy: the doctor on duty at the Emergency Ambulance

Conditions of accepting the practice:

1./ Participation, based on the Study and Exam Regulations of the University.

2./ Fulfillment of the practice requirements

Detailed description of the practice requirements:

Getting to know the work of the Emergency Ambulance:

- Observing the administrative tasks in connection with patient examination. (assignments, computerized patient admission, ambulance diary, patient records)
- Procedure and practice of making a diagnosis
- Getting to know and practicing the duties related to patient examination.
- Observing the examination of X-ray results, and diagnosis making.
- Getting to know the procedure of patients referral to certain departments.

FOG-MA211

ODONTOTECHNOLOGICAL PRACTICE

(Summer practice)
2015/2016, 2nd semester, 2nd year, Dental students

Place: Faculty of Dentistry, Building A, Training Laboratory
Time: 2 x 35 hours (Odontotechnology) in July according to the group arrangement
Exam: Signature
Credit: 0

Teachers: Dr. Krisztina Ungvári assistant professor (35 hours/semester)
Dr. Diána Graca resident (35 hours/semester)

Conditions of accepting the practice:
1./ Participation, based on the Study and Exam Regulations of the University.
2./ Fulfillment of the practice requirements

Detailed description of the practice requirements:

1. week
- 1. day – Drawing of teeth (incisor, canine), carving teeth in wax (upper first incisor with root), handpieces and burs in use, demonstration
- 2. day – Drawing of teeth (premolars and molars), carving teeth in wax (lower premolar with root)
- 3. day – Carving teeth in plaster (upper premolar), learn to use handpieces and burs
- 4. day – Carving teeth in plaster, learn to use handpieces and burs
- 5. day – Use of impression materials on mannequin. Making study casts, bite registration. Mounting the casts in the articulator – demonstration

2. week
- 1. day – Students laboratory: Mounting the casts in the articulator based on Bonwill triangle. Preparation of resin teeth, embedding them in plaster
  Surgery: making upper and lower jaw alginate impression from each other, bite registration, making a cast.
- 2. day – Students laboratory: Mounting the casts in the articulator for gnatology practice
  Visiting the dental technical laboratory (2 groups from 8.00 am., 2 groups from 10.00 am.)
- 3. day – Students laboratory: Mounting the casts in the articulator for gnatology practice
  Surgery: making upper and lower jaw alginate impression from each other, bite registration, making a cast.
- 4. day – Students laboratory: teeth recognition practice (on extracted human teeth)
- 5. day – Students laboratory: Power Point presentation about a dental technical procedure with own photos taking in the laboratory. Evaluation of model mounting.

In the 2nd week students visit a dental technical laboratory in small groups (watch metal casting, ceramic works, model preparation etc.) and make documentation about a technical procedure, which is presented in the last day of the summer practice. Pictures from the internet are not accepted!

Conditions of accepting the practice for those who spend the practice outside the University

At the end of the practice the student must present:
- upper and lower study cast and bite registration
- mounted casts in articulator for Gnatology Practice
- an upper middle incisor with root carved in wax, coronal size about 2-3cm
- a lower premolar with root carved in wax, coronal size about 2-3cm
- an upper premolar carved in white plaster (only coronal part)
- a lower molar carved in white plaster (only coronal part)
- a Power Point presentation about a dental technical procedure (4-7 slides) with photos made by the student. Pictures from the internet are not accepted!

Those students who don't come to the Dental Faculty Students Laboratory for the practice, have to bring a certification from the head of the laboratory, where they stay for the practice, in which he/she declares that the student spent two weeks in the lab and fulfilled the above mentioned tasks.
This statement must arrive to the Dean's Office of the Dental Faculty till **20 August 2016**.
Students have to show their work prepared by themselves in the first week of Preclinical Course of Prosthodontics

- An upper middle incisor with root carved in wax, coronal size about 2-3 cm
- A lower premolar with root carved in wax, coronal size about 2-3 cm
- An upper premolar carved in white plaster (only coronal part)
- A lower molar carved in white plaster (only coronal part)

- A power point presentation about a dental technical procedure (4-7 slides) with photos made by the student. Pictures from the internet are not accepted! The presentation will be assessed; the mark will be counted among the results of the Preclinical Course of Prosthodontics. This is also a condition of accepting this course.

COMPULSORY ELECTIVE SUBJECTS

UNIVERSITAS SCIENTIARUM SZEGEDIENSIS
SZEGEDI TUDOMÁNYEGYETEM
Általános Orvostudományi Kar
MAGATARTÁSTUDOMÁNYI INTÉZET

Faculty of Medicine
DEPARTMENT OF BEHAVIOUR SCIENCES

COMMUNICATION IN DENTISTRY – FOG-MAC020

Dentistry 1st year – 2015/2016 2nd semester

SUBJECT

Subject type	compulsory subject		
Credit	2		
Prerequiste	-		
Semester	year	fall	spring
	I.	☐	☒

Subject description	The introductory curriculum of psychology focuses on the basics of psychology, which prepares the instruction of medical psychology as practical principle during the third and fourth year. The subject of psychology directs attention on the study of human nature, introduces recent results of the psychological experiments, and formulates unanswered questions and future directions. Discussion of theoretical and practical aspects of communication is essential within the course. During the practices the students will get to know and acquire the most important aspects of communication. These will be essential for those communication strategies which will be taught within the clinical courses and which target the establishment of good doctor-patient relationship. Psychology concept acquired along the lectures will also be used during the practices.
General aims of the subject	Introducing psychological concepts that are crucial for the medical practice, establishment of doctor-patient relationship, and adequate communication strategies. Acquiring and applying of basic concepts of communication
Main topics	Scope of psychology, principles of general psychology, concepts of social psychology and personal psychology
Course organizer	**Annabella Obál** Department of Behavioral Sciences, 6722 Szeged, Szentháromság Str. 5. tel: 62/420-530; e-mail: obalannabella@gmail.com
Conditions for accepting the subject	• Participation at the lectures and practices as per the general regulations. • Oral exam • Test
Recommended literature	• Nolen-Hoeksema S., Fredrickson B.L., Loftus G.R., Wagenaar W.A.: *Atkinson and Hilgard's Introduction to Psychology*. Cengage Learning EMEA, 2009. • Gerry Kent, Mary Dalgleish: *Psychology and Medical Care*. London, 1996. Saunders.

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COMMUNICATION IN DENTISTRY

Dentistry 1st year – 2015/2016 2nd semester

LECTURE – FOG-MAC021

Number of lessons 14x1
Headcount / Groups 30

Place **12th room, Purjesz Béla Educational Building**
6720 Szeged, Korányi fasor 9.
Time **Tuesday, 9.00–10.00 a.m.**
Lecturers **Dr. Csaba Hamvai** – Department of Behavioral Sciences, University of Szeged
Dr. Oguz Kelemen – Department of Behavioral Sciences, University of Szeged

Schedule

			Lecturer
1.	2-Feb-2016	Scope of psychology. Contemporary themes, perspectives of psychology	Oguz Kelemen
2.	9-Feb-2016	Making sense of the physical environment. Sensation, perception, schemas, top-down processes	Oguz Kelemen
3.	16-Feb-2016	Attention and memory	Oguz Kelemen
4.	23-Feb-2016	Making sense of the social environment. Elements of the social perception	Oguz Kelemen
5.	30-Feb-2016	The psychology of social interactions	Csaba Hamvai
6.	8-Mar-2016	Attitudes and persuasion	Csaba Hamvai
7.	15-Mar-2016	Special Day Off	
8.	22-Mar-2016	Motivation (drives, Maslow's hierarchy of needs). Emotions	Csaba Hamvai
9.	5-Apr-2016	The mechanism of human behavior (classical conditioning, and it's practical utility)	Csaba Hamvai
10.	12-Apr-2016	The mechanism of human behavior (instrumental, observational, and complex learning, and it's practical utility)	Csaba Hamvai
11.	19-Apr-2016	Intelligence	Oguz Kelemen
12.	26-Apr-2016	The personality. Behaviorist, cognitive, humanistic, evolutionary approaches	Oguz Kelemen
13.	3-May-2016	Aspects of human development I.	Csaba Hamvai
14.	10-May-2016	Aspects of human development II.	Csaba Hamvai

Requirements

- Participation at the lectures as per the general regulations. Attendance will be recorded at each lecture.
- Oral exam

Assessment evaluation (5)
Credit 1

COMMUNICATION IN DENTISTRY

Dentistry 1st year – 2015/2016 2nd semester

PRACTICE – FOG-MAC022

Number of lessons	7x2
Headcount / Groups	30 persons, 2 groups
Teachers	**Dr. Csaba Hamvai** – e-mail: hamu80@gmail.com

Topics of practice

Week 1.	Introduction, technical details
Week 2.	Basic elements of communication
Week 3.	Factors which influence the communicational process
Week 4.	Nonverbal communication I.
Week 5.	Nonverbal communication II.
Week 6.	Questioning. Establishing context
Week 7.	Skill lab. Summary

Methods

- Case studies (with structured tasks)
- Training, demonstration games
- Structured role play
- Video

Requirements

- Obligatory participation during the skill lab practice
- Maximum 1 absence is permitted
- Test (video analysis, and definitions)

Assessment	term mark (5)
Credit	1

PRACTICE GROUPS – FOG-MAC021

Group	Day	Time	Venue	Teacher
FOK 1.	Friday Starting 1-Feb	8–10	Hippokratész Hall (1st floor) **Dept. of Behaviour Sciences**	Hamvai Csaba
FOK 2.	Friday Starting 1-Feb	10–12	Hippokratész Hall (1st floor) **Dept. of Behaviour Sciences**	Hamvai Csaba

Special Day Off: 14-15th March. **Spring break:** 28th March-1 April, 2016**. End of term:** 14th of May, 2016.
End of course: 18th of March, 2016.

Department of Behaviour Sciences: 6722 Szeged, Szentháromság u. 5.

February 2016, Szeged

COMMUNICATION IN DENTISTRY

Dentistry 1st year – 2015/2016 2nd semester

THESIS FOR ORAL EXAM – FOG-MAC022

1. **Perspectives of psychology**: biological-cognitive neuroscience, individual perspective, social psychology (lecture+Atkinson pp.12-17.)
2. **Main approaches of individual perspective**: cognitive-behavior/experimental psychology, psychodinamic, humanistic (lecture+ Atkinson pp. 12-17.)
3. **Perception 1)**: recognition-identification of the objects (bottom-up, top down processes, gestalt, geons) (lecture+Atkinson pp.157-161., 171-176.)
4. **Perception 2)**: constancies (colour, shape, size), bottom-up, top down processes (lecture+Atkinson pp. 179-184.)
5. **Perception 3)**: localization-distance perception, motion perception, efferent copy (lecture+Atkinson pp. 157-164.)
6. **Perception 4)**: abstractions-shemas (Atkinson pp. 176-177+lecture)
7. **Attention**: function of attention: relationship of the attention and consciousness, theory of signal detection (signal/noise screening), cognitive resource- cognitive load, conscious attention needed for acquiring new skills. Automatic response out of the control of attention, errors in the medical practice (lecture+Atkinson pp. 114-116., 154-156.)
8. **Stages of memory, Atkinson-Shiffrin theory**. (lecture+ Atkinson pp. 272-274.)
9. **Working memory**: ~ span, function, structure, Baddley model (lecture+Atkinson pp. 277-285.)
10. **Classification of long-term memory**: implicit memory: priming, classical conditioning, skills; explicit memory: episodic memory, semantic memory (lecture)
11. **Long-term memory**: explicit memory: coding, retrieving, theories of forgetting, forgetting and emotions, (lecture+Atkinson pp. 285-292.)
12. **Improving the memory** (lecture+Atkinson 307-311.)
13. **Implicit memory**: priming, classical conditioning, skills, ~ and amnesia (lecture+Atkinson pp. 293-296.)
14. **Constructive memory**: inferences, post-event reconstructions (lecture+Atkinson pp. 298-302.)
15. **Motivation**: homeostasis, basic drives (one example), incentive theory, the relationship between the drives and incentives, Hebb's optimal arousal theory, Maslow hierarchy (lecture+Atkinson pp. 263, 359-366., 486-487.)
16. **Attitude and attitude change**: cognitive dissonance and attitude change, foot in the door technique, rationalization, levels of attitude change (obedience, identification, internalization), sandwich technique, elaboration likelihood modell (lecture+Atkinson pp. 630-632. 635-636., 662-667.)
17. **Social influence**: social facilitation and inhibition, deindividuation**,** bystander intervention and diffusion of responsibility (lecture+Atkinson pp. 610-617.)
18. **Compliance and obedience**: obedience to authority (Milgram experiment), comformity (Ash experiment), informational social influence, normative social influence, institutional norms (Zimbardo experiment) (lecture+Atkinson pp. 618-629., 636-638.)
19. **Group processes**: group decision making, group think, group polarization, reference groups (lecture+Atkinson pp. 634-635, 638-639.)
20. **Emotions**: **James-Lange and followers**: bodily changes and emotions**,** James-Lange theory, Cannon-Bard's critics, somatic marker theory (Damasio) (lecture+Atkinson pp. 408-411.)
21. **Emotions**: **emotional expressions**. facial feedback hypothesis, basic emotions (Ekman), evolutionary role of the emotions in communication (Darwin) (lecture+Atkinson pp. 412-414.)
22. **Emotions**: **cognitive component of the emotions**: components of emotion, two-factor theory, Schacter-Singer experiment, misattribution of arousal, cognitive appraisal (Lazarus), regulation of emotion and the marshmallow test (lecture+Atkinson pp. 396-402.,415-416.)

23. **Impression formation**: stereotype and top down processes, schemas, primacy effect, self fulfilling prophecy, individuation, fundamental attribution error (lecture+Atkinson pp. 650-660.)
24. **Social-cognition**: theory of mind, intentionality, mirror neurons, imitation (lecture)
25. **Relationship of heredity and environment**: interaction of personality and environment: reactive, evocative, proactive (lecture+Atkinson pp. 49-496.)
26. **Nature-nurture debate**: concept of the tabula rasa, maturation, critical periods (example), sensitive periods (example) (lecture+Atkinson pp. 70-72.)
27. **Intelligence I**: psychological task: performance-personality tests, difference between the Binet and Weschler task, WAIS: verbal IQ - performance IQ (lecture+Atkinson pp. 436-438.)
28. **Intelligence II**: general intelligence (g=general) Factor analytical process, What kind of mental processes are measured by the tests? (lecture+Atkinson pp. 438-439.)
29. **Intelligence III**: mental retardation, dementia, crystalled scores/ fluid scores. What are determed by IQ?(lecture)
30. **Psychoanalitic personality theory**: definition of personality, conscious, pre-conscious, unconscious, id, ego, superego (lecture+ Atkinson pp. 467-468.)
31. **Psychoanalitic personality theory**: definition of personality, personality dymanics, defense mechanism (list 6), projective test (lecture+Atkinson pp. 468-471., 473-475.)
32. **Psychoanalitic development theories**: **Freud**: psychosexual stages (lecture+Atkinson pp. 471-472.)
33. **Psychoanalitic development theories**: **Erikson** (Erikson' s psychosocial stages) (lecture)
34. **Behaviour personality- and development theory**: definition of personality, tabula rasa, learning processes, role of classical conditioning and instrumental (operant) conditioning in social learning, observational learning (lecture+pp. Atkinson pp. 477-479.)
35. **Cognitive personality and development theory**: definition of personality, social cognitive theory, Kelly's personal construct theory, self-schema (lecture+Atkinson pp. 479-483.)
36. **Humanistic personality theory**: definition of personality, Rogers (self-actualizing tendency, client-centered therapy, ideal and actual self, unconditional positive regard, Q-sorting, Maslow's hierarchy of needs (lecture+Atkinson pp. 484-488.)
37. **Personality**: **Big 5** (lecture+Atkinson pp. 463-464.)
38. **Attachment**: stranger anxiety, separation axiety, autonomy (lecture+Atkinson pp. 90-92.)
39. **Attachment styles**: strange situation, internal working models (lecture+Atkinson pp. 92-94.)
40. **Classical conditioning**: UCR, UCS, CR, CS, extinction, second-order conditioning, generalization and discrimination (lecture+Atkinson pp. 239-244)
41. **Instrumental conditioning**: law of effect, positive and negative reinforcement, positive and negative punishment, shaping, conditioned reinforcers, partial-reinforcement (ratio and interval schedules), escape learning, avoidance learning (lecture+Atkinson pp. 246-253.)
42. **Complex learning** cognitive map, observational learning (lecture+Atkinson pp. 255-257.)
43. **Levels of communication**: information level, metacommunication (practice handout)
44. **Channels of communication**: elements of communication, verbal and nonverbal channels (practice handout)
45. **Aspects of communication**: open and closed questions, factors that influence communiation, filters, preventing communication distortion, establishment of the context (practice handout)

FOG-MAC071

DENTAL PREVENTION IN CHILDREN

LECTURE

2015/2016, 1st semester, 1st-2nd year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Thursday 13.00-14.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Date	Lecture	Lecturer
03. 09. 2015.	1. Defining dental caries, epidemiology and prevention	Dr. Ildikó Pinke assistant professor
10. 09. 2015.	2. Aim of health education. Health-conscious behavior	Dr. Krisztina Kenyeres assistant lecturer
17. 09. 2015.	3. Preventive approach in childhood	Dr. Krisztina Kenyeres
24. 09. 2015.	4. Preventive dental care for children in kindergarten	Dr. Krisztina Kenyeres
01. 10. 2015.	5. Preventive dental care in school	Dr. Ildikó Pinke
08. 10. 2015.	6. Practice for kindergartener	Dr. Ildikó Pinke Dr. Krisztina Kenyeres
15. 10. 2015.	7. Practice for kindergartener	
22. 10. 2015.	8. Practice for kindergartener	
29. 10. 2015.	9. Practice for kindergartener	
05. 11. 2015.	10. Practice in school	
12. 11. 2015.	11. Practice in school	
19. 11. 2015.	12. Practice in school	
26. 11. 2015.	13. Practice in school	Dr. Ildikó Pinke
03. 12. 2015.	14. Consultation	Dr. Ildikó Pinke

Recommended literature:

- MATHEWSON RJ, PRIMOSCH RE: *Fundamentals of pediatric dentistry*. Quintessence, 1995
- KOCH G, POULSEN S: *Pediatric dentistry-a clinical approach*, Blackwell Munksgaard, 2001

Conditions of accepting the semester:

- Active participation on lectures and practices, based on the Study and Exam Regulations of the University,
- Attendance of lectures and practices is mandatory.
- Completion of the tasks in the practices, average of grades should be at least 2.0.
- Demonstrations will take place during the practical course. Knowledge of selected references related to each topic, the average mark of all the tests should be at least 2.0 (the mark of small tests may be max. 2 times 1).
- Unsatisfactory test should be corrected; it may be corrected **only once!**
- Students must come to the practices in time: If a student is late three times, it is equal to one missing. If a student comes more than 20 minutes late, it is regarded as an absence.

UNIVERSITAS SCIENTIARUM SZEGEDIENSIS
SZEGEDI TUDOMÁNYEGYETEM
Általános Orvostudományi Kar
MAGATARTÁSTUDOMÁNYI INTÉZET
Faculty of Medicine
DEPARTMENT OF BEHAVIOUR SCIENCES

INTRODUCTION TO MEDICINE – FOG-MAC010

Dentistry 1st year – 2015/2016 1st semester

SUBJECT

Subject type	compulsory elective subject		
Credit	2		
Prerequiste	-		
Semester	year	fall	spring
	I.	☒	☐

General aims of the subject: The main goal of the course is to give an outline of the science and art of medicine. To gain this purpose, a multidisciplinary approach is used.

Main topics

- History of Medicine
- Health Philosophy and Behavioral Medicine
- Preventive Medicine and Community Health
- Medical Ethics

Course organizer:

Prof. Dr. Bettina Pikó, MD, DSc D
University of Szeged, Department of Behavioral Sciences 6722 Szeged, Szentháromság Str.5.
tel: 62/420-530; e-mail: fuzne.piko.bettina@med.u-szeged.hu

Conditions for accepting the subject

- Participation at the lectures and practices as per the general regulations
- Written test-exam

Recommended literature:

Pikó, B. (ed.):
Introduction to Medicine. Basic Principles of Behavioral Sciences and Preventive Medicine.
Medicina Publishing House, 2009. Budapest.

INTRODUCTION TO MEDICINE

Dentistry 1st year – 2015/2016 1st semester

LECTURE – FOG-MAC011

Number of lessons	14x1
Headcount / Groups	70
Place	**Kukán Ferenc hall of the Ophthalmology Clinic** 6720 Szeged, Korányi fasor 10-11.
Time	**Tuesday, 3-4 p.m.**
Lecturers	**Prof. Dr. Bettina Pikó, MD, DSc** **Dr. Adél Serfőző-Tóth, PhD**

Schedule

1.	1-Sep-2015	Health Philosophy and Behavioral Medicine I. Modern concept of health and disease	Dr. Pikó
2.	8-Sep-2015	Health Philosophy and Behavioral Medicine II. What influences health? The development of disease: Causal models	Dr. Pikó
3.	15-Sep-2015	Health Philosophy and Behavioral Medicine III. Stress, coping, culture and lifestyle	Dr. Pikó
4.	22-Sep-2015	Preventive Medicine and Public Health I. Community diagnosis. Describing health problems	Dr. Pikó
5.	29-Sep-2015	Preventive Medicine and Public Health II. Analyzing health problems. Risk perception and risk communication	Dr. Pikó
6.	6-Oct-2015	Preventive Medicine and Public Health III. Basic theories of prevention and health education. The role of screening in prevention	Dr. Pikó
7.	13-Oct-2015	History of medicine I. Earliest medicine, antique times	Dr. Serfőző-Tóth
8.	20-Oct-2015	History of medicine II. Medicine in Middle Ages, Renaissance, Enlightenment	Dr. Serfőző-Tóth
9.	27-Oct-2015	History of medicine III. Science and technology in the19th-20th centuries	Dr. Serfőző-Tóth
10.	3-Nov-2015	Medical Ethics I. The Hippocratic oath	Dr. Serfőző-Tóth
11.	10-Nov-2015	Medical Ethics II. Ethics, morality and ethical theories	Dr. Serfőző-Tóth
12.	17-Nov-2015	Medical Ethics III. Basic principles of bioethics I.	Dr. Serfőző-Tóth
13.	24-Nov-2015	Medical Ethics IV. Basic principles of bioethics II.	Dr. Serfőző-Tóth
14.	1-Dec-2015	WRITTEN TEST EXAM	

Requirements

- Participation at the lectures as per the general regulations.
- Written test-exam at the end of the first semester.
  The mark of the exam is assessed as an ESE (End-Semester Exam)

Assessment evaluation (5)

Credit 1

Test-exam **1-Dec-2015, 3 p.m.**
Kulka Frigyes room in Baló József Education Center
(Old Press Building, 6725 Szeged, Szikra u. 8.)

INTRODUCTION TO MEDICINE

Dentistry 1st year – 2015/2016 1st semester

PRACTICE – FOG-MAC011

Number of lessons	14x1
Headcount / Groups	70
Time and place	**Kukán Ferenc hall of the Ophthalmology Clinic** **Tuesday, 3-4 p.m.**
Teachers	**Prof. Dr. Bettina Pikó, MD, DSc** **Dr. Adél Serfőző-Tóth, PhD**

Topics of practice

Week 1.	Modern concept of health and disease
Week 2.	What influences health? The development of disease: Causal models
Week 3.	Stress, coping, culture and lifestyle
Week 4.	Community diagnosis. Describing health problems
Week 5.	Analyzing health problems. Risk perception and risk communication
Week 6.	Basic theories of prevention and health education. The role of screening in prevention
Week 7.	Earliest medicine, antique times
Week 8.	Medicine in Middle Ages, Renaissance, Enlightenment
Week 9.	Science and technology in the19th-20th centuries
Week 10.	The Hippocratic oath
Week 11.	Ethics, morality and ethical theories
Week 12.	Basic principles of bioethics I.
Week 13.	Basic principles of bioethics II.
Week 14.	WRITTEN TEST EXAM

Requirements

- Participation at the practices as per the general regulations.
- Written short essay

Assessment: term mark (5)

Credit: 1

Essay

For the mark of the practice, the students should write a short essay about a selected topic freely chosen from the list of questions of the official book (with own opinions and not downloaded from the internet!).

Formal requirements:

handwriting, 2-3 A4 pages, margins: 2.5 cm.

First page: name; year; group; title of subject; essay title.

Deadline: **24. Nov.** The essay should be **handed** in to the teacher, **AND** it also should be **uploaded** on Coospace.

September 2015. Szeged

Introduction to informatics

FOG-MAC091/092

Topics

- Math behind computers
- The history and big figures of computer science
- Operating systems
- Office programs
- Computer Networks
- Web technologies (HTML, CSS)
- Databases
- Basics of programming
- Fundamental algorithms of computer science
- Current trends and applications of informatics

Requirements

Lecture

There are 5 short quizzes during the semester each for 5 points (on every 2nd lecture approximately). By collecting a total of at least 16 points on the quizzes, one can get an exemption from examination.

In case someone is not satisfied with the mark received based on the short quizzes additional exams can be taken during the exam period. The points earned on the short quizzes during the semester also get counted towards the final score. Based on the final total score grades get determined as follows

85-100	Excellent (5)
73-84	Good(4)
59-72	Average (3)
51-58	Pass (2)
0-50	Fail (1)

Practice

There are two midterms during the semester. In case someone does not meet the minimum requirements to get a passing mark, one unsuccesful midterm can be retaken at the end of the semester. Based on the total percentage of points collected during the midterms, grades get determined as follows.

85-100	Excellent (5)
73-84	Good(4)
59-72	Average (3)
51-58	Pass (2)
0-50	Fail (1)

Recommended literature

J. Glenn Brookshear, Dennis Brylow (2014): Computer Science: An Overview (12th edition). Pearson, ISBN/ISSN: 978-0133760064

Medical Physiology Seminar I.

Course code: FOG-MAC101-1/2

Description:

The course's main objective to discuss the material lectured on the Medical Physiology for Dental and Pharmacy students I. course, in an interactive small study group environment. In the first semester, the discussed topics include cellular physiology, nerve and muscle physiology, functions of the blood, respiration, and the cardiovascular system. Detailed topic list and learning objectives and supplementary materials are accessible on our website ((http://www.phys.szote.u-szeged.hu).

Requirements:

Attending the seminars is compulsory. Students showing negligence during the semester concerning visiting the seminars (more than 3 missed group seminars) or not fulfilling the requirements will receive a failed (1) grade that will result in the loss of credits as well. The seminars begin on time, late arrival (>10 min) is also considered as an absence. The missed seminar can be made up with a seminar on the same topic in the same week with the consent of both affected seminar teachers.
The weekly seminars are intended to discuss the topics presented in the lectures. The students are expected to be prepared and be active participants in the seminars with good background knowledge of the topics involved.
The students will undergo interim exams (demonstrations) during each semester, evaluated on a 5 grade scale. In the first semester of the academic year of 2015/2016 there will be 2 mandatory tests (MTOs) on the 5th and 11th week. The material of the 1st MTO is composed of the material lectured until the end of the 4th week, the material of the 2nd MTO is composed of the material lectured on the 5-10th weeks of the semester. The students can be examined in writing and orally on the MTOs. In addition, on the weeks of the MTOs, the students will write 1-1 MCQ (25-25 questions each, 35 minutes, 50 points total). The points obtained on the 2 MCQ test can yield bonus on the end semester exam as detailed in the requirements which is accessible on our website (http://www.phys.szote.u-szeged.hu).
The knowledge of the student will be evaluated on a scale (1-5) by the seminar teacher based on the results of the 2 MTOs and any further written or oral examinations of the semester. Improvement of the determined seminar grade is not possible.

FOG-MAC041

SMOKING PREVENTION IN DENTAL PRACTICE

LECTURE

2015/2016, 1st semester, 1st-2nd year, Dental students
Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Thursday 14.00-15.00 (1 hour/week)
Exam: Evaluation (5)
Credit: 1

Teacher: Dr. Gábor Braunitzer assistant professor

Limit: 20 students!

Aims of the course:
The goal of the course is that dental students be able to help patients with behavioural and pharmatceutical cessation techniques. A further-similarly important-goal is to provide students theoretical basis and practical skills that will make them congruent role models for cessation.

Structure of the course:
The first semester consists of theoretical lectures, aimed mostly at the pathophysiology and pathology of smoking and the basics of behavioral modification as a form of intervention

The topics include:

The chemistry of cigarette smoke
The pathophysiology of smoking
Smoking as an addiction
Pharmaceutical agents in cessation
Risk groups
Behavioral modification

Assessment:
At the end of the semester, students have to write a test based on what they have learnt in the semester. The final course grade is composed of the following:

- active participation (i.e. participation in discussions, presentations etc.) (30 %)
- test grade (70 %)

Conditions of accepting the semtester:

The end-semester test consists of 40 questions, and grading is done according to the following:

0-50 %: failed (1)
50 %-65 %: passed (2)
65 %-75 %: average (3)
75 %-92 %: good (4)
92 %-100 %: excellent (5)

The rules of making up for missed classes, missed exams etc. are to be found in the pertaining official regulations of the university.

Literature:
Increasing Capacitiy for Tobacco Research in Hungary, Budapest 2013
Lecture slides

FOG-MAC042

SMOKING PREVENTION IN DENTAL PRACTICE

PRACTICE

2015/2016, 2nd semester, 1st – 2nd year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Practice place: Faculty of Dentistry, Building A, Conference Room
Practice time: Friday 13.00-16.00 (1 hour/week, to be held en bloc)
Exam: Term Mark
Credit: 1

Teacher: Dr. Márk Antal assistant professor
Dr. Zsolt Zalai assistant lecturer
Limit: 20 students

Literature:
Margaret L Loyd – Robert Bor: Communication Skills for Medicine
Second edition 2004, Elsevier. ISBN 0 443 07411 9
Increasing Capacitiy for Tobacco Research in Hungary, Budapest 2013

Main Objectives:
To make students acquire the ability for dentist-patient consultation, to be able to develop an ability to employ the proper consultation models in an adequate way.
Up to the end of the course students must be aware of the significance of dentist-patient communication and know the critical points.
They must acquire the basic ethical principles expected during dentist-patient communication and be able to integrate them in their behaviour during consultation.
Students must be familiar with the ethical and communication methods of physicians' information obligation.
Students must be able to conduct a structured dentist-patient consultation of 10 minutes and then to accomplish a video analysis and evaluate their work in groups.
Students must be able to work out a case in detail.

Objectives of practices:
Making students practise and critically analyse dentist-patient meeting
„You won't become a good actor just by going to the theatre. You should step up the stage and act." G. P. Harden

Conditions of accepting the semester:

- Attending the practices is compulsory.
- In accordance with the Study and Examination Regulation of the Faculty of Dentistry if the number of absences is more than 25% of the number of practices in the semester, the course can not be accepted.
- Make up of a missed practice: based on the study and exam regulations of the University.
- The students will be graded according to their practical work.

ELECTIVE SUBJECTS

FOG-MAE211

RESPONSES OF THE LIVING CELL TO THE ENVIRONMENT

LECTURE

2015/2016, 1st semester, 1st-2nd-3rd year, Dental students

Fall semester: 31 August – 5 December 2015

Place: Faculty of Dentistry, B Building, White Room
Time: Monday 14.00-16.00 (2 hours/week)
Exam: Evaluation (5)
Credit: 2

Limit: 40 students!

Date	Lecture	Lecturer
31. 08. 2015.	1.The oral microbial community	Prof. Dr. Kornél Kovács professor
07. 09. 2015.	2. Oral biofilms	Prof. Dr. Kornél Kovács
14. 09. 2015.	3. Life cycle of oral Streptococci	Prof. Dr. Kornél Kovács
21. 09. 2015.	4. Studying oral biofilms	Prof. Dr. Kornél Kovács
28. 09. 2015.	5. Metabolism of oral salivary substrates	Prof. Dr. Kornél Kovács
05. 10. 2015.	6. The extracellular matrix	Prof. Dr. Kornél Kovács
12. 10. 2015.	7. Test	Prof. Dr. Kornél Kovács
19. 10. 2015.	8. Proteins and DNA in oral biofilms	Prof. Dr. Kornél Kovács
26. 10. 2015.	9. Environmental sensory perception	Prof. Dr. Kornél Kovács
02. 11. 2015.	10. Streptococcus mutans, the cariogenic microbe	Prof. Dr. Kornél Kovács
09. 11. 2015.	11. Biofilms in periodontal health and disease	Prof. Dr. Kornél Kovács
16. 11. 2015.	12. Ventilator associated pneumonia	Prof. Dr. Kornél Kovács
23. 11. 2015.	13. Probiotics, prebiotics	Prof. Dr. Kornél Kovács
30. 11. 2015.	14. Test	Prof. Dr. Kornél Kovács

Recommended literature:

Recommended literature and information source:

1. N. S. Jakubovics, R. J. Palmer Jr. Oral Microbial Ecology. Caister Academic Press, Norfolk, UK. (2013) ISBN: 978-1-908230-82-9 and 978-1-908230-17-1.
2. PPT presentations of the lectures made available to the students electronically.
3. Personal consultations at pre-arranged schedule.

Conditions of accepting the semester:

Attendance at the lectures is compulsary. Presence will be checked by reading the barcode of the Student ID card. Absence from a maximum of 25 % of the lectures is permitted during the semester. Certificates (medical, community, family or otherwise) will be critically considered. Those, who have been absent more than 25 % of the lectures automatically fail the course.

Two written tests have to be completed during the semester, which are evaluated in a scale of 0-100 %. The average of the two tests should exceed 50 % in order to be successful. Failing students will be given the possibility of written or oral exam during the exam period

FOG-MAE221

SELECTED METHODS IN MODERN BIOLOGY

LECTURE

2015/2016, 2nd semester, 1st year, Dental students
Spring semester: 1 February – 14 May 2016
Holiday: 29 March – 1 April 2016

Place: Faculty of Dentistry, Building B, White Room
Time: Monday 12.00-14.00 (2 hours/week)
Exam: Evaluation (5)
Credit: 2

Date	Lecture	Lecturer
01. 02. 2016.	1. Introduction into oral microbiology	Prof. Dr. Kornél L. Kovács professor
08. 02. 2016.	2. Important oral microbes	Prof. Dr. Kornél L. Kovács
15. 02. 2016.	3. Oral biofilm formation	Prof. Dr. Kornél L. Kovács
22. 02. 2016.	4. The complex roles of oral Streptococci	Prof. Dr. Kornél L. Kovács
29. 02. 2016.	5. Methods to study oral biofilms	Prof. Dr. Kornél L. Kovács
07. 03. 2016.	6. Physiology of saliva	Prof. Dr. Kornél L. Kovács
21. 03. 2016.	7. Components of the extracellular matrix	Prof. Dr. Kornél L. Kovács
04. 04. 2016.	8. Proteins and nucleic acids in oral biofilms	Prof. Dr. Kornél L. Kovács
11. 04. 2016.	9. Communication with the environment	Prof. Dr. Kornél L. Kovács
18. 04. 2016.	10. Biofilms and cariogenesis	Prof. Dr. Kornél L. Kovács
25. 04. 2016.	11. Periodontal biofilms	Prof. Dr. Kornél L. Kovács
02. 05. 2016.	12. Diseases associated with oral microbota	Prof. Dr. Kornél L. Kovács
09. 05. 2016.	13. Probiotics, prebiotics and biofilms	Prof. Dr. Kornél L. Kovács

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