Faculty of Medicine of the University of Porto
<table>
<thead>
<tr>
<th>Year</th>
<th>St. Admissions</th>
<th>St. Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005/2006</td>
<td>Undergraduate students: 250 (admission classification: 18.1-19.6)</td>
<td>Undergraduate students – 1,378 PhD students – 156 Master students + other – 598</td>
</tr>
<tr>
<td></td>
<td>Post-graduate students: 252</td>
<td>Faculty 358 (159 PhDs)</td>
</tr>
<tr>
<td>Doctoral Programs</td>
<td>Master Programs</td>
<td>Post-Graduate Courses</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>➢ Metabolism: Clinics and Experimentation</td>
<td>➢ Bioethics</td>
<td>➢ Forensic Medicine</td>
</tr>
<tr>
<td>➢ Public Health</td>
<td>➢ Forensic Sciences</td>
<td>➢ Hydrology and Climatology</td>
</tr>
<tr>
<td>➢ Clinical and Health Services Research</td>
<td>➢ Orthognatic e Orthodontic Surgery</td>
<td>➢ Heath Education</td>
</tr>
<tr>
<td>➢ Forensic Sciences</td>
<td>➢ Epidemiology</td>
<td>➢ Pain Medicine</td>
</tr>
<tr>
<td>➢ Molecular Medicine and Oncology</td>
<td>➢ Evidence and Decision in Heath</td>
<td>➢ Sports Medicine</td>
</tr>
<tr>
<td>➢ Neuroscience</td>
<td>➢ Economics and Health Management</td>
<td>➢ Occupational Medicine</td>
</tr>
<tr>
<td>➢ Genetic Pathology</td>
<td>➢ Medical Informatics</td>
<td>➢ Orthodontia</td>
</tr>
<tr>
<td>➢ Bioengineering</td>
<td>➢ Emergency Medicine</td>
<td>➢ Oral e Extra-Oral Rehabilitation</td>
</tr>
<tr>
<td>➢ GABBA</td>
<td>➢ Molecular Medicine and Oncology</td>
<td>➢ Renal Therapeutic Support</td>
</tr>
<tr>
<td></td>
<td>➢ Microsurgery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>➢ Psychiatry and Mental Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>➢ Public Health</td>
<td></td>
</tr>
</tbody>
</table>
Outreach

- Lab Visits (mainly high school students)
- Faculty visits (last year of high school)
- School visits (from elementary to high school) at the “Brain Awareness Week”
- “Brain Awareness Week” presentations at public places
- Participation in the University of Porto fair
- Junior University
- “Ciência Viva”
E-learning

Dominant technology in supporting new approaches to teaching and learning.

Unique ability to bring together a community of learners unrestricted by time or place: offers the means of creating an educational experience long idealized.

Creates learning environments that facilitate higher order cognitive abilities and encourage these to thrive “Transactional perspective of teaching and learning embedded in a critical community of learners”

Garrison and Anderson 2003
Aims

Develop a virtual learning environment to blend with the traditional learning scenario

Provide interactive, multimedia learning materials covering special parts of the curriculum

Create a forum for clarification and discussion of curriculum contents and related subjects

Open public access to teaching and research material
From course syllabus to e-learning - I

• **Course syllabus** (Information on the objectives, teaching methods and study plans)
  – All 349 undergraduate and postgraduate subjects offered regularly are at the Faculty web site (http://med.up.pt)
  – 41 subjects not offered in a regular basis (eg. Spring Courses or Summer School) provide information at their own web sites
  – Portuguese and in English for most of the subjects

• **Online learning materials** (online study materials such as HTML, Word, Excel, PowerPoint or PDF files)
  – 65% (27 out of 42) of the undergraduate subjects (Medicine Course)
    94% for basic subjects / 44% for clinical subjects
    (At the Faculty (19) or the University (8) web infrastructure)
  – Less than 15% of the postgraduate subjects (5 out of 21 Master and other postgraduate courses)
From course syllabus to e-learning - II

- **E-learning (Moodle @FMUP e WebCT @UP)**
  - 20% subjects (11 out of 42) of the Medicine Course (Moodle – 3; WebCT – 8)
  - 5 post-graduate courses (Moodle)
    - Wiki is currently being used to support teachers and students interactivity

- **E-learning functionalities**
  - Course contents, events scheduling, exercises, automatic exam corrections, assignment’s submissions, evaluation statistics, chat, news and forum

- **Internet access**
  - Nearly 100 computers available for students at Faculty labs
  - Wireless free access provided at most of Faculty and University premises
## Subjects and E-Learning functionalities

<table>
<thead>
<tr>
<th></th>
<th>Static online learning material</th>
<th>Interactivity Lecturer / Student</th>
<th>Automatic correction exercises and exams</th>
<th>Simulation exercises</th>
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</thead>
<tbody>
<tr>
<td>Undergraduate subjects</td>
<td>62% (26)</td>
<td>12% (5)</td>
<td>12% (5)</td>
<td>2% (1)</td>
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<tr>
<td>(n=42)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Master subjects</td>
<td>8% (16)</td>
<td>1% (2)</td>
<td>0.5% (1)</td>
<td>0</td>
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<tr>
<td>(n=195)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other post-graduate</td>
<td>17% (19)</td>
<td>0</td>
<td>1% (1)</td>
<td>0</td>
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<tr>
<td>graduate subjects</td>
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<tr>
<td>(n=112)</td>
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<tr>
<td>Other subjects</td>
<td>20% (8)</td>
<td>0</td>
<td>5% (2)</td>
<td>2% (1)</td>
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<tr>
<td>(n=41)</td>
<td></td>
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</table>
Course Syllabus (eg. Molecular Cell Biology)

Cellular and Molecular Biology
FACULTY OF MEDICINE OF THE UNIVERSITY OF PORTO

Curricular profile

Annual discipline of the 1st year of the courses of Medicine of the Faculty of Medicine of the University of Porto (FMUP) and of Dental Medicine of the Faculty of Dental Medicine of the University of Porto (FMDUP), with a total load of 150 hours.

Top

CONTENTS AND PURPOSES

The discipline of Cellular and Molecular Biology is focused on the aspects of the structural and molecular organization of the animal cell that are related to its normal functioning, as well as to the molecular mechanisms during development and aging. As an indispensable base to the understanding of developmental biology, the discipline includes in General Embryology. The basic purposes of the discipline aimed at providing students with theoretical and practical knowledge on (i) the structural and molecular organization of the cell and the underlying mechanisms to its normal function, (ii) the processes that govern the embryonic development and aging and (iii) the methodology and tools used in the study of the cell. The student should be enabled to practice several techniques of microscopic observation and laboratorial protocols, to
CARACTERIZAÇÃO DO PAPEL DO FACTOR DE TRANSCRIÇÃO DRE11 NO DESENVOLVIMENTO EMBRIONÁRIO DO SISTEMA NUCLEOPÈRICO
Deolinda Lima, Sandra Rebelo, Catarina Reguengo, Cláudia Lopes

Online learning materials (eg. Molecular Cell Biology)
E-learning platform (eg. Introduction to Medicine)
Aprendizagem on-line
Biologia Celular e Molecular

**Aviso**
As questões colocadas no fórum de Biologia Celular e Molecular só serão respondidas se forem enviadas até **30 de Janeiro**.
A actividade normal será retomada a partir de 5 de Fevereiro (2º semestre)

---

<table>
<thead>
<tr>
<th>Tópicos</th>
<th>Respostas</th>
<th>Autor</th>
<th>Vistos</th>
<th>Última Mensagem</th>
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<tr>
<td>Inamovível: Como participar no fórum de Biologia Celular e Molecular</td>
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</table>

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**Síntese e processamento de RNA**

**Resposta:**
O termo "sequências de consenso" aplica-se a sequências de nucleotídeos (DNA ou RNA) e de aminoácidos. O DNA e o processo de transcrição como exemplo, o que acontece é que um determinado segmento de DNA executa uma determinada função dependendo de situações de transcrição que ocorrem na sequência. Por exemplo, a sequência (CGCG), que ocorre com maior frequência, ativa o gene para produzir enzimas. As sequências de consenso, então, são sequências que operam em função da formação de complexos.
“Quizzes” semanais

Adenoma e Carcinoma do colon

Pergunta 1. Aspecto macroscópico de extensa lesão do recto de um homem de 55 anos. Qual o diagnóstico mais provável?

A. Hiperplasia da mucosa rectal
B. Hipertrofia das pregas da mucosa rectal
C. Úlcera rectal
D. Rectite crónica
E. Adenoma Viloso
EDUCATIONAL MULTIMEDIA TASK FORCE

DG XIII Telematics and Applications Programme
DG XXII Leonardo da Vinci Programme

LAHYSTOTRAIN
Integration of Virtual Environments and Intelligent Training Systems for Laparoscopy/Hysteroscopy Surgery Training
E-learning platform - online evaluation

Preview 9º Miniteste - Base de Dados

Choose one answer.

- a. Um campo numérico cujo valor nunca se repete
- b. Um campo cujo valor se pode repetir
- c. Um campo numérico cujo valor se pode repetir
- d. Um campo cujo valor nunca se repete

2. a.

Dado o seguinte esquema e de acordo com os dados nele existentes quantos doentes com idade inferior a 20 anos foram internados desde o início de 2006 no serviço de Pneumologia?

<table>
<thead>
<tr>
<th>Nº Doente</th>
<th>Data Nascimento</th>
<th>Morada</th>
<th>Nome</th>
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<td>654321</td>
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<table>
<thead>
<tr>
<th>Nº Internamento</th>
<th>Data Entrada</th>
<th>Nº Doente</th>
<th>Serviço</th>
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<td>654321</td>
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<tr>
<td>64</td>
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<tr>
<td>33</td>
<td>05/02/2006</td>
<td>6789</td>
<td>6</td>
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</table>
Evaluation of impact on the learning process

Quality of the material available:
high quality learning contents

Pages most frequently visited:
lecture presentations, learning modules-seminars; students deliverables

Correlation between student access to the web site and final grade:
significant positive correlation although a causal relationship could not be inferred
In the future

• On-line labs
• Clinical Simulation
  • Interview teaching tool
  • On-line physical exam teaching
Papers ISI-WoS 2002-2006
Portugal / Univ Porto

<table>
<thead>
<tr>
<th>Ano</th>
<th>Portugal</th>
<th>UP</th>
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<tbody>
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<td>2002</td>
<td>4303</td>
<td>828</td>
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<td>2003</td>
<td>5498</td>
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<td>2004</td>
<td>5618</td>
<td>1169</td>
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<td>2005</td>
<td>6628</td>
<td>1369</td>
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<tr>
<td>2006</td>
<td>7643</td>
<td>1553</td>
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</table>
Full Papers ISI-WoS 2006 by department

- Centro de Farmacologia e Biopatologia Clínica
- Centro de Morfologia Experimental
- CINTESIS – Centro de Investigação em Tecnologias e Sistemas de Informação em saúde
- Unidade de Investigação e Desenvolvimento Cardiovascular do Porto
- Unidade de Investigação e Desenvolvimento de Nefrologia
- Within IPATIMUP
- Within IBMC
Vanilloids in Pain Therapy

Rat

Human

Vanilloid Receptors (TRPV1) in the urinary bladder

Francisco Cruz
António Avelino
Paulo Dinis
Ana Charrua
Célia Cruz
Carlos Silva
Gene Therapy for Pain Control

- Medial thalamus
- Midline thalamus
- PAG
- RVM
- VLM
- DRt
- Spinal Cord

Graph:
- Acetona
- SNI + THa
- SNI
- SNI + THZ

Legend:
- * p < 0.05
- ** p < 0.01
- *** p < 0.001

- Programme 1 - Advanced classification methods (Joaquim Marques da Sá)
- Programme 2 - Modelling and simulation (Wim van Meurs)
- Programme 3 - Clinical diagnosis and signal processing (João Bernardes)
Research at the undergraduate level

- Participation in research projects while attending the various modules
- Being part of a research team in a longitudinal module of the medical course
- Applying to a research project granted by Univ. Porto / Private Foundation
- Apply to the European “Standard Research Exchange Project” of the IFMSA
- Regular scientific workshops (FMUP students organization)
- YES Meeting – Young European Scientists Meeting (FMUP students organization)