Second-cycle Degree Course in
REPRODUCTIVE BIOTECHNOLOGIES (LM-9)
AY 2019-20
AIM: To train experts able to work in the field of Assisted Reproductive Technology, both in human and animal field

- 10-15% couples (50 millions couples) are infertile and turn to IVF/ART
- OMS: Increase of 6.5 millions of infertile couples in 20y
- In 40y, 8 millions babies were born through ART
- 500.000 newborns/y using ART; 13.000 in Italy
- 370 centers of ART in Italy
- 71% of all cycles of ART in Europe

- Zootechnics
- Global populations of vertebrates declined by 58% (1970-2012)
- Endagered animal species (>3000)

“Here we adapt existing Assisted Reproduction (ART) Techniques to fertilize Southern White Rhinoceros oocytes with Northern White Rhinoceros spermatozoa (from dead animals)”
At present, there is a growing demand for assisted reproduction, which requires trained specialists in an field in which theoretical, practical, ethical, legal, and communication notions are constantly evolving.
ENTRY REQUIREMENTS
Bachelor or Master degree in an appropriate biological-, biomedical- or veterinary-science subject, medicine or healthcare science (Biotechnologies, Life Sciences, Livestock science, Nursing, Pharmacy, Medicine, Veterinary Medicine,...)

BASIC KNOWLEDGE in:
✓ Cytology and Histology
✓ Cell Physiology and Cell Culture
✓ Biochemistry and Molecular Biology
✓ Applied and Medical Genetics
✓ English language

PREPARATORY COURSES
+ ENTRANCE TEST (not mandatory) (Nov-Dec)

I YEAR
Jan-June

Elective/Preparatory courses
Nov-Dec

II YEAR
Jan-May

Graduation (on time)
MAIN FEATURES OF THE DIDACTIC PLAN

LESSONS IN ENGLISH (level B1 required)

INNOVATIVE in ITS TEACHING LESSONS PLAN

- Remedial/Preparatories Courses
- Lessons condensed in 1 semester Jan-June (Single-subject classes)
- Laboratorial and practical lessons (50% of total hours)
- Professional experts in human medicine as teachers (II year) + up-to-date scientific Seminars
- Career Day

Dr. A. Barbonetti (AQ)  Dr. Listorti (AlmaRes RM)  Prof. L. Stuppia (Chieti)  Dr. A. Borini (BO)  Dr. F. Gallo (RM)
Second-cycle Degree Course in REPRODUCTIVE BIOTECHNOLOGIES

MAIN STRENGTHS OF THE COURSE

• **RESEARCH-LED TEACHING** (up-to-date lessons)
  regenerative medicine, embryology, stem cells, computational biology,
  tumors progression, andrology, cryobiology, angiogenesis, toxicology,
  endocannabinoids, epigenetics, nutrigenetics, genetic testing.

• **DIDACTIC/RESEARCH LABORATORIES**
  Individual workstations

• **STUDENT-ORIENTED COURSE**
  - 22-25 students/year
  - Personalized tutoring (1 teacher/student)
  - Active involvement of students in the decision making process (AVA system)

• **OTHER PROFESSIONALISING ACTIVITIES**
  (Radio di Ateneo; Corte Costituzionale/Senato; Registro nazionale PMA; Erasmus traineeship: Svezia, Spagna, Inghilterra, Germania, Scozia)
EDUCATIONAL GOALS

The Course will provide the fundamental **theoretical** and **practical knowledge** necessary to understand and perform up-to-date techniques in the areas of Assisted Reproduction Technology (ART).

Students will receive training in:

- Cell biology and physiology of gametogenesis, fertilization and embryo development
- Ethical and legal controversies surrounding assisted reproduction in humans
- Pre-implantation genetic diagnosis
- Epigenetic, toxicology, angiogenesis concepts related to reproduction
- Advances in cryobiology
- Gamete handling
- Embryo culture
- Andrology
- Micromanipulation techniques (IVM, IVF, ICSI)
Second-cycle Degree Course in REPRODUCTIVE BIOTECHNOLOGIES

FIRST YEAR

✓ STRUCTURE AND FUNCTION OF THE REPRODUCTIVE SYSTEM 11 CFU
✓ BIOLOGY OF GAMETES, IVM AND IVF TECHNIQUES 10
✓ ANDROLOGY I 6
✓ MOLECULAR MARKERS IN REPRODUCTION 12
✓ EMBRYOLOGY 6
✓ CRYOBIOLOGY 11
✓ SCIENTIFIC COMMUNICATION, PART I 3

BASIC TEACHING SUBJECTS
(+++ animal models)
## Second-cycle Degree Course in REPRODUCTIVE BIOTECHNOLOGIES

### SECOND YEAR

- ✓ GENETICS OF HUMAN REPRODUCTION 10 CFU
- ✓ DIAGNOSTIC HISTOLOGY APPLIED TO CELLS AND TISSUES OF THE RS 5
- ✓ ANDROLOGY II 6
- ✓ ICSI PROCEDURE AND ADVANCED TECHNIQUES IN PMA 6
- ✓ LEGISLATION AND BIOETHICS IN MEDICINE OF REPRODUCTION 6
- ✓ SCIENTIFIC COMMUNICATION, PART II 3

PROFESSIONALISING TEACHING SUBJECTS

(*** human samples/ External Centres)
Second-cycle Degree Course in REPRODUCTIVE BIOTECHNOLOGIES

ELECTIVE COURSES (8 CFU)

- ANGIOGENESIS AND REPRODUCTION 3 CFU
- DEVELOPMENTAL AND REPRODUCTIVE TOXICOLOGY 5

- LIVE CELLS IMAGING 4
- CELLULE STAMINALI IN MEDICINA RIGENERATIVA 4
- TECNICHE DI MICROMANIPOLAZIONE EMBRIONALE 5
The Reproductive Biotechnologies MSc allows graduates to pursue a career in assisted reproduction and/or research in the reproductive sciences, both in human and animal field.
Second-cycle Degree Course in REPRODUCTIVE BIOTECHNOLOGIES

LM-9  Reproductive Biotechnologies

**Altre informazioni sulle caratteristiche degli studenti laureati**

<table>
<thead>
<tr>
<th></th>
<th>Teramo</th>
<th>Mezzogiorno*</th>
<th>Italia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Età alla laurea (medie, in anni)</td>
<td>26,9</td>
<td>27,0</td>
<td>26,5</td>
</tr>
<tr>
<td>Voto di laurea (medie, in 110-mi)</td>
<td>111,6</td>
<td>111,2</td>
<td>109,6</td>
</tr>
<tr>
<td>In corso</td>
<td>94,7</td>
<td>71,8</td>
<td>76,2</td>
</tr>
<tr>
<td>Durata degli studi (medie, in anni)</td>
<td>2,0</td>
<td>2,5</td>
<td>2,4</td>
</tr>
<tr>
<td>Indice di ritardo (rapporto fra ritardo e durata legale)</td>
<td>0,01</td>
<td>0,16</td>
<td>0,13</td>
</tr>
</tbody>
</table>

**ALMALAUREA 2017**

**Job of graduates in LM9:**
- 24% Education and Research
- 23% Chemical
- 21% Health Care
- 9% Abroad

Most graduates works as Researchers or Biologists
Second-cycle Degree Course in REPRODUCTIVE BIOTECHNOLOGIES

EDUCATIONAL RESULTS

EMBRYOLOGISTS or BIOTECHNOLOGISTS (73%)

6/33

LONDON (UK) ++
CAMBRIDGE (UK) ++
WIESBADEN (Germany)
WARSAW (Poland)

RESEARCHERS or PhD STUDENTS (27%)

9/33

PHILADELPHIA (USA)
WIEN (AUSTRIA)
LONDON (UK)
LEUVEN (Holland)
MURCIA (Spain)
CACERES (Spain)

And our graduates?

A sample of 33 our graduates (from Linkedin)

18/33

MILANO +++
BOLOGNA
MODENA
REGGIO EMILIA
ASCOLI PICENO
TERAMO ++
L’AQUILA
PESCARA
ROMA++

NAPOLI
SALERNO
CASERTA
BARI
POTENZA

IZS TORNO SUBITO
Second-cycle Degree Course in REPRODUCTIVE BIOTECHNOLOGIES


Programme Director: Alessia Colosimo  acolosimo@unite.it

Educational Manager: Natalia Izzi  nizzi@unite.it

https://www.facebook.com/Reproductive-Biotechnologies-
University-of-Teramo

Alumni interviews

Student guides (2121 KB)

Orientation
Valentina Russo
tel. 0861 266930
vrucco@unite.it
Second-cycle Degree Course in
REPRODUCTIVE BIOTECHNOLOGIES

http://www.unite.it/UniTE/Le_interviste_a_due_ex_students_di_Biotecnologie_della_riproduzione

http://youtube.be/hO43PvHHB9I

EX-ALUMNI

Silvia Benasciutti & Attilio Anastasi
Second-cycle Degree Course in REPRODUCTIVE BIOTECHNOLOGIES

EX-ALUMNI

Fabio Bellia (PhD)

Miglior poster Congresso Società Italiana Neuropsicofarmacologia

Giulia Sabatinelli (PhD)

Primo premio Start-up «Wonder Prenatal test»
Thank you for your attention!

Questions

Email: acolosimo@unite.it