

Advanced Clinical Embryology (ACE) Course

Academic Year 2025-2026



Teaching Module 1

"Human Reproduction: Physiology, Pathophysiology and Recent Advances"

Submodules	Lectures & Instructors	Date & Time
Scientific & Academic Director	Welcoming Session and Principle Aims of the ACE Course <i>Mara Simopoulou</i>	1/10/2025 5:00 p.m. – 5:15 p.m.
Opening Lecture	On the future of assisted reproduction: Lessons from the past <i>Jacques Cohen</i>	1/10/2025 5:15 p.m. – 6:00 p.m.
1.1	Female Reproductive System: Physiology and Oogenesis <i>Laura Melado Vidales</i>	1/10/2025 6:00 p.m. – 7:00 p.m.
1.2	Female Infertility: Aetiology and management strategies <i>Ippokratis Sarris</i>	8/10/2025 5:00 p.m. – 6:00 p.m.
1.3	Male Reproductive System: Physiology and Spermatogenesis <i>Francesco Lotti</i>	8/10/2025 6:00 p.m. – 7:00 p.m.
1.4	Evaluation and management of male infertility <i>Theodora Stasinou</i>	15/10/2025 5:00 p.m. – 6:00 p.m.
1.5	Ovarian stimulation in the era of personalized and precision medicine <i>Theodoros Kalampokas</i>	15/10/2025 6:00 p.m. – 7:00 p.m.
1.6	Embryo and Endometrium: A complex relationship <i>Irene Souter</i>	15/10/2025 7:00 p.m. – 8:00 p.m.
1.7	Diminished ovarian reserve from bench to bedside <i>Panagiotis Drakopoulos</i>	22/10/2025 5:00 p.m. – 6:00 p.m.
1.8	Embryo Transfer: Evidence based clinical practice <i>Nicholas Christoforidis</i>	29/10/2025 5:00 p.m. – 6:00 p.m.
1.9	Recurrent Miscarriage and Recurrent Implantation Failure: How far have we come? <i>Petros Drakakis</i>	29/10/2025 6:00 p.m.– 7:00 p.m.
1.10	The role of Nutrition and Metabolic Factors on Human Reproduction and MAR <i>Chavarro Jorge</i>	29/10/2025 7:00 p.m. – 8:00 p.m.

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Teaching Module 2 "Organization, Management and Quality Control in the Embryology Laboratory, in the Andrology Laboratory and in Cryopreservation Banks"		
Submodules	Lectures & Instructors	Date & Time
2.1	Organization and management on setting up an Assisted Reproduction Unit <i>Despina Tzanakaki</i>	5/11/2025 5:00 p.m. – 6:00 p.m.
2.2	Organization, management, and Standard Operating Procedures (SOPs) for the Embryology Laboratory <i>Giles Palmer</i>	5/11/2025 6:00 p.m. – 7:00 p.m.
2.3	Organization, management, and Standard Operating Procedures (SOPs) for the Andrology Laboratory <i>Evangelini Evgeni</i>	12/11/2025 5:00 p.m. – 6:00 p.m.
2.4	Organization, management, and Standard Operating Procedures (SOPs) for Cryopreservation Banks <i>Alexia Chatziparasidou</i>	12/11/2025 6:00 p.m. – 7:00 p.m.
2.5	Establishing an Optimal PGT Laboratory: from a Clinical Embryologist's Perspective <i>Debbie Venier</i>	12/11/2025 7:00 p.m. – 8:00 p.m.
2.6	Quality control and crisis management in the IVF Laboratory <i>Chelsey Leisinger</i>	19/11/2025 5:00 p.m. – 6:00 p.m.
2.7	Inspecting an IVF Laboratory <i>Gerry Celia</i>	19/11/2025 6:00 p.m. – 7:00 p.m.
2.8	Working on Key Performance Indicators (KPIs) <i>Polyxeni Kyrou</i>	19/11/2025 7:00 p.m. – 8:00 p.m.
2.9	Data, data, data. The past, present and future of data management in IVF <i>Jaques Cohen</i>	26/11/2025 5:00 p.m. – 6:00 p.m.
2.10	Designing a patient-centered MAR Unit <i>Cuevas Irene</i>	26/11/2025 6:00 p.m. – 7:00 p.m.

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Teaching Module 3

“Semen Analysis, Sperm Preparation and Evaluation of Sperm Quality and Functionality”

Submodules	Lectures & Instructors	Date & Time
3.1	Standardized Semen Analysis: Lessons for Novice and Experts <i>Gerica LaVelle</i>	3/12/2025 5:00 p.m. – 6:00 p.m.
3.2	Sperm morphology assessment by strict criteria <i>Gerica LaVelle</i>	3/12/2025 6:00 p.m. – 7:00 p.m.
3.3	Semen Analysis: Ancillary tests <i>George Liperis</i>	3/12/2025 7:00 p.m. – 8:00 p.m.
3.4	Automated analysis of sperm diagnostics and selection for therapeutics: CASA and Beyond <i>Meurig Gallagher</i>	10/12/2025 5:00 p.m. – 6:00 p.m.
3.5	Optimal management of ejaculate and non-ejaculate originating spermatozoa for MAR purposes <i>Michael Carroll</i>	10/12/2025 6:00 p.m. – 7:00 p.m.
3.6	Sperm preparation techniques for diagnostic and MAR purposes <i>Filipa da Silva Barbosa</i>	10/12/2025 7:00 p.m. – 8:00 p.m.
3.7	Advanced semen tests <i>Dolores Lamb</i>	17/12/2025 5:00 p.m. – 6:00 p.m.
3.8	Contributions of the Male Gamete to the Embryo and Offspring <i>Dolores Lamb</i>	17/12/2025 6:00 p.m. – 7:00 p.m.
3.9	Oxidative and Reproductive Stress in Male Infertility: The Delicate Balance of Redox Homeostasis <i>Ralf Henkel</i>	17/12/2025 7:00 p.m. – 8:00 p.m.
3.10	Sperm RNAs, markers of past, present, future, and generational health <i>Stephen A. Krawetz</i>	17/12/2025 8:00 p.m. – 9:00 p.m.

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Teaching Module 4

“Novel Techniques and Approaches in Gamete, Embryo, Testicular
and Ovarian Tissue Cryopreservation”

Submodules	Lectures & Instructors	Date & Time
4.1	How understanding basic cryobiology can help us improve our outcomes Wayne Caswell	7/1/2026 5:00 p.m. – 7:00 p.m.
4.2	Safety in human reproductive cell cryopreservation Lodovico Parmegiani	7/1/2026 7:00 p.m. – 8:00 p.m.
4.3	Cryostorage safety: validation, quality control and best practices George Koustas	14/1/2026 5:00 p.m. – 6:00 p.m.
4.4	Factors Affecting Vitrification Success Omar Ammar	14/1/2026 6:00 p.m. – 7:00 p.m.
4.5	Oocyte and Embryo cryopreservation Laura Rienzi	21/1/2026 5:00 p.m. – 6:00 p.m.
4.6	Frozen Embryo Transfer: Optimizing the Outcome Eman Elgindy	21/1/2026 6:00 p.m. – 7:00 p.m.
4.7	Restoration of function following ovarian tissue cryopreservation: In vivo and in vitro outcomes Evelyn Telfer	28/1/2026 5:00 p.m. – 6:00 p.m.
4.8	Testicular tissue cryopreservation: Where are we today? Elena Kontogianni	28/1/2026 6:00 p.m. – 7:00 p.m.
4.9	Human ovary and oocyte biology: Insights obtained from the fertility preservation initiative David Albertini	28/1/2026 7:00 p.m. – 8:00 p.m.

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Teaching Module 5

“Insemination Methods and Personalized Medicine”

Submodules	Lectures & Instructors	Date & Time
5.1	Insemination methods an Overview of IUI, IVF, ICSI and specialized equipment <i>Jackson Kirkman-Brown (TBC)</i>	4/2/2026 5:00 p.m. – 6:00 p.m.
5.2	Micromanipulation in the era of Individualized Medicine: how to select the best sperm for ICSI <i>Lodovico Parmegiani</i>	4/2/2026 6:00 p.m. – 7:00 p.m.
5.3	Intracytoplasmic Sperm Injection (ICSI): Technique and technical aspects <i>Mina Alikani</i>	11/2/2026 5:00 p.m. – 6:00 p.m.
5.4	Evaluation of insemination outcomes <i>Nikica Zaninovic</i>	11/2/2026 6:00 p.m. – 7:00 p.m.
5.5	ICSI for All? <i>Mina Alikani</i>	18/2/2026 5:00 p.m. – 6:00 p.m.
5.6	How to select the best insemination method: Evidence Based Clinical Practice <i>Gemma Arroyo</i>	18/2/2026 6:00 p.m. – 7:00 p.m.
5.7	Managing cases of extreme low oocyte yield: Which is the best insemination option? <i>Valerio Pisaturo</i>	18/2/2026 7:00 p.m. – 8:00 p.m.
5.8	Artificial oocyte activation: From basic research to clinical practice <i>Karl Swann</i>	25/2/2026 5:00 p.m. – 6:00 p.m.
5.9	Understanding the oocyte and decoding its competence <i>Federica Franciosi</i>	25/2/2026 6:00 p.m. – 7:00 p.m.

Written exams on Modules 1-5

**(The examination platform will open on February 27th, 2026, at 7:00 p.m.
and will close on March 26th, 2026, at 6:59 p.m.)**

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Teaching Module 6 “Understanding the Embryo and Culture Systems: Mapping of state-of-the-art Equipment and Protocols”		
Submodules	Lectures & Instructors	Date & Time
6.1	Physiology and development of the preimplantation embryo <i>Mara Simopoulou</i>	4/3/2026 5:00 p.m. – 6:00 p.m.
6.2	The pyramid of successful implantation <i>Laura Rienzi</i>	4/3/2026 6:00 p.m. – 7:00 p.m.
6.3	Metabolism of the preimplantation embryo <i>Roger Sturmey (TBC)</i>	4/3/2026 7:00 p.m. – 8:00 p.m.
6.4	Culture media in IVF <i>Dean Morbeck</i>	11/3/2026 5:00 p.m. – 6:00 p.m.
6.5	Embryo culture incubators <i>Jason E. Swain</i>	11/3/2026 6:00 p.m. – 7:00 p.m.
6.6	Time-lapse imaging technology in the IVF laboratory <i>Lorena Bori Arnal - Marcos Meseguer</i>	18/3/2026 5:00 p.m. – 6:00 p.m.
6.7	The epigenetics of blastocyst culture <i>Masoud Zamani Esteki</i>	18/3/2026 6:00 p.m. – 7:00 p.m.
6.8	Embryo Culture: Past, Present and Future <i>David Gardner</i>	1/4/2026 8:00 a.m. – 9:00 a.m.

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Teaching Module 7

"Basic Knowledge and Recent Advances on Embryo Quality and Evaluation:
 From Embryo Morphology to Artificial Intelligence"

Submodules	Lectures & Instructors	Date & Time
7.1	Embryo selection David Gardner	1/4/2026 9:00 a.m. – 10:00 a.m.
7.2	The making of the blastocyst Giovanni Coticchio	15/4/2026 5:00 p.m. – 6:00 p.m.
7.3	Novel approaches in oocyte and preimplantation embryo evaluation and automation in MAR Alejandro Chavez-Badiola (TBC)	15/4/2026 6:00 p.m. – 7:00 p.m.
7.4	Embryo identification Irene Dimitriadis	22/4/2026 5:00 p.m. – 6:00 p.m.
7.5	Non-invasive selection of embryo viability: The value of the embryo's metabolic blueprint Denny Sakkas	22/4/2026 6:00 p.m. – 7:00 p.m.
7.6	Artificial intelligence in MAR: <i>The Clinician's Perspective</i> Victoria Jiang	29/4/2026 5:00 p.m. – 6:00 p.m.
7.7	Artificial intelligence in the IVF laboratory Charles Bormann	29/4/2026 6:00 p.m. – 7:00 p.m.
7.8	Morphokinetic evaluation of the preimplantation embryo: What is there to gain? Eros Nikitos	29/4/2026 7:00 p.m. – 8:00 p.m.

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Teaching Module 8

“Preimplantation Genetic Testing: From Embryo Biopsy and Genetic and Molecular Diagnosis to Novel Approaches and Considerations”

Submodules	Lectures & Instructors	Date & Time
8.1	Genetic profile, analysis of the preimplantation embryo and novel approaches Dagan Wells (TBC)	6/5/2026 5:00 p.m. – 6:00 p.m.
8.2	Tips and tricks for optimizing micromanipulations during biopsy for PGT Debbie Venier	6/5/2026 6:00 p.m. – 7:00 p.m.
8.3	Aneuploidy and Developmental Arrest of the Human Preimplantation Embryo Alan Handyside	6/5/2026 7:00 p.m. – 8:00 p.m.
8.4	Preimplantation Genetic Testing for Structural Rearrangements (PGT-SR) Darren Griffin	13/5/2026 5:00 p.m. – 6:00 p.m.
8.5	Preimplantation Genetic Testing for Monogenic Disorders (PGT-M) Joanne Traeger-Synodinos	13/5/2026 6:00 p.m. – 7:00 p.m.
8.6	Preimplantation genetic testing for aneuploidy (PGT-A): Benefits, risks, and it's true place in MAR Eric Forman	20/5/2026 5:00 p.m. – 6:00 p.m.
8.7	Embryo ploidy status and implantation: A conundrum Danilo Cimadomo	20/5/2026 6:00 p.m. – 7:00 p.m.
8.8	Combining PGT-A with PGT-M: Pros and Cons Dimitra Christopikou	20/5/2026 7:00 p.m. – 8:00 p.m.
8.9	Physiology of the preimplantation embryo post biopsy and vitrification Aikaterini Chatzimeletiou	27/5/2026 5:00 p.m. – 6:00 p.m.
8.10	Chromosomal mosaicism: Origins and clinical implications Christian Ottolini	27/5/2026 6:00 p.m. – 7:00 p.m.
8.11	Non-Invasive Preimplantation Genetic Testing Gary Harton (TBC)	27/5/2026 7:00 p.m. – 8:00 p.m.

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Teaching Module 9

"Novel Concepts and Experimental Approaches in Assisted Reproduction"

Submodules	Lectures & Instructors	Date & Time
9.1	The strategic role of the clinical embryologist as a Scientist and Innovator Jared Robins	3/6/2026 5:00 p.m. – 6:00 p.m.
9.2	Novel promising concepts in clinical embryology research Ioannis Sfontouris	3/6/2026 6:00 p.m. – 7:00 p.m.
9.3	Novel experimental approaches in addressing Ovarian Insufficiency Sonia Herraiz	3/6/2026 7:00 p.m. – 8:00 p.m.
9.4	Novel experimental approaches: Mitochondrial Replacement Therapy Nuno Costa-Borges	10/6/2026 5:00 p.m. – 6:00 p.m.
9.5	Introducing new technology into the IVF lab: Past and Future Joyce Harper (TBC)	10/6/2026 6:00 p.m. – 7:00 p.m.
9.6	The Clinical Psychologist's perspective on novel approaches and Add-ons offered in MAR Mariana Veloso Martins	10/6/2026 7:00 p.m. – 8:00 p.m.
9.7	The Bioethicist's perspective on novel approaches and Add-ons offered in MAR Heidi Mertes	17/6/2026 5:00 p.m. – 6:00 p.m.
9.8	Advanced Maternal Age: Challenges and Solutions Martha Luna	17/6/2026 6:00 p.m. – 7:00 p.m.
9.9	Novel approaches for studying early embryo-maternal interface Mina Popovic	17/6/2026 7:00 p.m. – 8:00 p.m.
9.10	Digital transformation of the IVF Unit Achilleas Papatheodorou	24/6/2026 5:00 p.m. – 6:00 p.m.
9.11	Concerns and Considerations in IVF practices David Albertini	24/6/2026 6:00 p.m. – 8:00 p.m.

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Teaching Module 10

"Research Methodology and Evidence Based Medicine"

Submodules	Lectures & Instructors	Date & Time
10.1	The evolution of research in female reproduction: Milestones and future goals <i>George Mastorakos</i>	1/7/2026 5:00 p.m. – 6:00 p.m.
10.2	Type of studies in research <i>Dionysios Palermos - Theodoros Sergeantanis</i>	1/7/2026 6:00 p.m. – 7:00 p.m.
10.3	Basic statistical principles for practicing physicians and embryologists <i>Dionysios Palermos - Theodoros Sergeantanis</i>	8/7/2026 5:00 p.m. – 6:00 p.m.
10.4	Lying with Statistics <i>Kimball O. Pomeroy</i>	8/7/2026 6:00 p.m. – 7:00 p.m.
10.5	The value of Systematic Reviews and Meta-Analyses in MAR <i>Efstratios Kolibianakis</i>	15/7/2026 5:00 p.m. – 6:00 p.m.
10.6	Evidence Based Medicine <i>Charalampos Siristatidis</i>	15/7/2026 6:00 p.m. – 7:00 p.m.
10.7	IVF add-ons: Proper Research Methodology and Execution <i>Mara Simopoulou</i>	22/7/2026 5:00 p.m. – 6:00 p.m.
10.8	Evidence-based Clinical Embryology: it is not that simple <i>Jacques Cohen</i>	22/7/2026 6:00 p.m. – 7:00 p.m.

Critical Analysis Skills Assessment

(The examination platform will open on August 1st, 2026, at 7:00 p.m.
and will close on August 31st, 2026, at 6:59 p.m.)

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Teaching Module 11

"Problem Based Learning Sessions: Passing on Experience"

Submodules	Lectures & Instructors	Date & Time
11.1	10 secrets of running an efficient IVF lab Keshav Malhotra (TBC)	2/9/2026 5:00 p.m. – 6:00 p.m.
11.2	Andrology-The challenge of handling different specimens Liesl Nel-Themaat (TBC)	2/9/2026 6:00 p.m. – 7:00 p.m.
11.3	Abnormal fertilization Steve Davies	2/9/2026 7:00 p.m. – 8:00 p.m.
11.4	Culture conditions-blastocyst problems: What do we need to know Arthur Chang (TBC)	9/9/2026 5:00 p.m. – 6:00 p.m.
11.5	Managing mosaic embryos: A dilemma Ioannis Georgiou (TBC)	9/9/2026 6:00 p.m. – 7:00 p.m.
11.6	Handling unusual patients-Things to watch out Bryan Kloos (TBC)	9/9/2026 7:00 p.m. – 8:00 p.m.
11.7	What are the characteristics of a publishable manuscript Pierre Comizzoli	16/9/2026 5:00 p.m. – 6:00 p.m.
11.8	From the trenches: Managing the process of reviewing Arthur Chang (TBC)	16/9/2026 6:00 p.m. – 7:00 p.m.
11.9	From data analysis to clinical relevance Alex Quaas	16/9/2026 7:00 p.m. – 8:00 p.m.
11.10	Continuing professional development and how to navigate your career as a clinical Embryologist Julia Paget	23/9/2026 5:00 p.m. – 6:00 p.m.
11.11	Staff Recruitment /Worldwide Embryologists Status Joe Conaghan (TBC)	23/9/2026 6:00 p.m. – 7:00 p.m.
11.12	The role of patient's history and sperm preparation techniques for diagnostic and ART purposes Stamatis Papaharitou (TBC)	23/9/2026 7:00 p.m. – 8:00 p.m.

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11.13	Conflict resolution <i>Andrew Thomson</i>	30/9/2026 5:00 p.m. – 6:00 p.m.
11.14	Responsibilities/Occupational Demands <i>Kathryn Go (TBC)</i>	30/9/2026 6:00 p.m. – 7:00 p.m.
11.15	Wellbeing and Burn-out in the IVF Laboratory <i>Emma Whitney (TBC)</i>	30/9/2026 7:00 p.m. – 8:00 p.m.
<u>Written exams on Modules 6-11</u> (The examination platform will open on September 30th, 2026, at 7:00 p.m. and will close on October 29th, 2026, at 6:59 p.m.)		