

Postgraduate Certificate Modeling and Simulation in Aesthetic Medicine



Postgraduate Certificate Modeling and Simulation in Aesthetic Medicine

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/postgraduate-certificate/modeling-simulation-aesthetic-medicine

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01

Introduction

Aesthetic Medicine faces significant challenges, including the need to ensure predictable outcomes and minimize risks associated with complex interventions. In this context, Modeling and Simulation are establishing themselves as cutting-edge solutions that enable practitioners to replicate clinical scenarios with greater accuracy. For example, the use of 3D simulations based on patient data makes it possible to anticipate how tissues will respond to procedures such as the injection of dermal fillers. Given this, specialists need to incorporate into their daily clinical practice the most modern strategies to use these Artificial Intelligence tools efficiently. With this idea in mind, TECH has launched an innovative online university program focused on this clinical field.





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Thanks to this 100% online Postgraduate Certificate, you will handle the most innovative Modeling and Simulation tools to optimize the results of aesthetic treatments considerably”

According to a new report by the World Health Organization, Aesthetic Medicine procedures have experienced significant growth in recent years. In this regard, the institution highlights that more than 75% of the procedures they performed focused on non-invasive improvements such as dermal fillers or botulinum toxin treatments. However, this increase poses challenges in terms of safety and predictability of results. Faced with this, practitioners have the responsibility to acquire advanced technical skills to handle state-of-the-art technological tools such as 3D modeling and dynamic simulations in order to reduce risks while optimizing clinical outcomes.

Within this framework, TECH presents a pioneering Postgraduate Certificate in Modeling and Simulation in Aesthetic Medicine. Conceived by references in this sector, the academic itinerary will delve into subjects ranging from the basics of Artificial Intelligence or the use of specialized software in the anticipation of facial changes in rejuvenation therapies to 3D body reconstruction methods to simulate aesthetic retouching. Along the same lines, the teaching materials will provide doctors with the keys to get the most out of computer programs such as VASER Shape, which will enable them to appreciate the results of abdominal, hip or thigh liposuction operations. In this way, graduates will develop advanced clinical skills to apply Modeling and Simulation techniques with efficiency and precision, improving both the quality of the patient's body and the results of the procedure.

On the other hand, the university program acquires greater dynamism thanks to the multimedia pills and the wide variety of didactic resources offered by TECH (such as specialized readings, interactive summaries or case studies). In addition, TECH's Relearning methodology will allow practitioners to obtain a much more effective update in a shorter period of time. In this way, your knowledge updating process will be completely natural.

This **Postgraduate Certificate in Modeling and Simulation in Aesthetic Medicine** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- ♦ The development of case studies presented by experts in Artificial Intelligence applied to Aesthetic Medicine
- ♦ The graphic, schematic and eminently practical content of the book provides scientific and practical information on those disciplines that are essential for professional practice
- ♦ Practical exercises where the process of self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



Generate rigorous three-dimensional simulations that anticipate the effects of aesthetic interventions on different facial and body tissues"

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Integrate into your clinical practice the most advanced techniques to adapt your aesthetic interventions to the individual needs of each person”

The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts.

You will delve into the use of DermaCompare to analyze the evolution of scars based on Artificial Intelligence algorithms.

With the innovative Relarning system developed by TECH, you will update your knowledge with efficiency and immediacy.



02 Syllabus

This university program in Modeling and Simulation in Aesthetic Medicine offers a detailed approach to the use of technologies in the healthcare field. Therefore, the curriculum will delve into the use of state-of-the-art software to simulate facial changes, predict results in mammoplasty and even to project real time effects of Botox injection. Also, the syllabus will delve into the analysis of facial symmetry, the projection of rejuvenation therapies and volumetric evaluation in body remodeling. This will ensure that graduates master Artificial Intelligence techniques to increase the accuracy of their aesthetic procedures.



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You will use a wide range of modeling tools to show accurate visualizations of expected results, which will increase users' understanding and confidence”

Module 1. Modeling and Simulation in Aesthetic Medicine

- 1.1. Procedure Simulation with Artificial Intelligence
 - 1.1.1. 3D Simulation of Facial Changes in Rejuvenation Procedures (Crisalix)
 - 1.1.2. Modeling Dermal Fillers Results and Lip Adjustments (Modiface)
 - 1.1.3. Visualization of Body Aesthetic Surgery Results (MirrorMe3D)
 - 1.1.4. Real-Time Projection of Botox and Fillers Results (TouchMD)
- 1.2. Creating 3D Patient Models
 - 1.2.1. Generating 3D Facial Models from Photographs (FaceGen)
 - 1.2.2. 3D Body Scanning and Reconstruction for Aesthetic Simulation (Artec Eva)
 - 1.2.3. Integration of Anatomical Data into 3D Models (Materialise Mimics)
 - 1.2.4. Realistic Skin Modeling and Texturing in Facial Reconstructions (ZBrush)
- 1.3. Simulation of Plastic Surgery Outcomes
 - 1.3.1. Simulation of Rhinoplasties with Modeling of Bone Structures (Rhinomodel)
 - 1.3.2. Projection of Results in Mammoplasty and Other Body Procedures (VECTRA 3D)
 - 1.3.3. Prediction of Changes in Post-Surgery Facial Symmetry (Geomagic Freeform)
 - 1.3.4. Visualization of Lifting and Facelift Results (Canfield Scientific)
- 1.4. Scar Reduction and Skin Regeneration Simulation
 - 1.4.1. Simulation of Dermal Regeneration in Laser Treatments (Canfield VECTRA)
 - 1.4.2. Prediction of Scar Evolution with AI Algorithms (DermaCompare)
 - 1.4.3. Modeling the Effects of Chemical Peels in Skin Regeneration (SkinIO)
 - 1.4.4. Projection of Results in Advanced Healing Treatments (Medgadget SkinAI)
- 1.5. Projection of Results in Rejuvenation Therapies
 - 1.5.1. Modeling the Effects of Expression Line Reduction (DeepFaceLab)
 - 1.5.2. Simulation of Radiofrequency Therapies and Their Impact on Firmness (Visage Technologies)
 - 1.5.3. Prediction of Results in Laser Resurfacing Procedures (Syneron Candela eTwo)
 - 1.5.4. Visualization of the Effect of Intense Pulsed Light (IPL) Treatments (3D LifeViz)





- 1.6. Facial Symmetry Analysis
 - 1.6.1. Evaluation of Facial Proportions by Means of Reference Points (Face++)
 - 1.6.2. Real-Time Symmetry Measurement for Aesthetic Procedures (Dlib)
 - 1.6.3. Analysis of Facial Proportions in Harmonization Procedures (MorphoStudio)
 - 1.6.4. Comparison of Symmetry before and after Aesthetic Treatments (MediCapture)
- 1.7. Volume Evaluation in Body Contouring
 - 1.7.1. Volumetric Measurement in Liposuction and Contouring Simulation (3D Sculptor)
 - 1.7.2. Analysis of Volume Changes in Buttock Augmentation Procedures (Sculpt My Body)
 - 1.7.3. Post-Lifting Body Contouring Evaluation (Virtual Surgical Planning)
 - 1.7.4. Prediction of Volume Changes in Non-Invasive Body Contouring (CoolSculpting Virtual Consult)
- 1.8. Simulation of Hair Treatments
 - 1.8.1. Visualization of Results in Hair Transplantation (HairMetrix)
 - 1.8.2. Projection of Hair Growth in PRP Treatments (TruScalp AI)
 - 1.8.3. Simulation of Hair Loss and Density in Alopecia (Keeps AI)
 - 1.8.4. Evaluation of the Effects of Mesotherapy Treatments on Hair (HairDX)
- 1.9. Simulation for Body Weight Reduction
 - 1.9.1. Projection of Results of Reductive and Shaping Treatments (Weight Loss Predictor)
 - 1.9.2. Analysis of Body Changes in Cryolipolysis Procedures (SculpSure Consult)
 - 1.9.3. Simulation of Volume Reduction in Ultrasonic Cavitation (UltraShape AI)
 - 1.9.4. Visualization of Body Radiofrequency Treatment Results (InMode BodyTite)
- 1.10. Modeling of Liposuction Procedures
 - 1.10.1. 3D Simulation of Abdominal Liposuction Procedure Results (VASER Shape)
 - 1.10.2. Evaluation of Changes in Hips and Thighs after Liposuction (Body FX)
 - 1.10.3. Modeling of Fat Reduction in Small and Targeted Areas (LipoAI)
 - 1.10.4. Visualization of Laser-Assisted Liposuction Results (SmartLipo Triplex)

03

Teaching Objectives

Through this TECH Postgraduate Certificate, health professionals will integrate Modeling and Simulation technologies during aesthetic practice. In this sense, graduates will develop advanced technical skills to skillfully handle 3D instruments and specialized software for both facial symmetry analysis and projection of surgical results. Thanks to this, physicians will be able to personalize treatments, optimize interventions and increase precision during therapies.



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You will acquire an approach based on clinical problem solving and employ Predictive Modeling to minimize the risks derived from aesthetic therapies”



General Objectives

- ♦ Develop advanced skills in the collection, cleaning and structuring of clinical and aesthetic data, ensuring the quality of the information
- ♦ Create and train predictive models based on Artificial Intelligence, able to anticipate aesthetic treatment results with high precision and personalization
- ♦ Manage specialized 3D simulation software to project potential outcomes of therapies
- ♦ Implement AI algorithms to improve accuracy in factors such as skin anomaly detection, sun damage assessment or skin texture
- ♦ Design clinical protocols tailored to the individual characteristics of each patient; taking into account their clinical data, environmental factors, and lifestyle
- ♦ Apply techniques for anonymization, encryption and ethical management of sensitive data
- ♦ Develop strategies to assess and adjust treatments based on the evolution of individuals, using visualization and predictive analytics tools
- ♦ Use synthetic data to train Artificial Intelligence models, extending predictive capabilities and respecting patients' privacy
- ♦ Adopt emerging Artificial Intelligence techniques to adjust and continuously improve therapeutic plans
- ♦ Be able to lead innovation projects, applying advanced technological knowledge to transform the Aesthetic Medicine sector





Specific Objectives

- ◆ Gain proficiency in three-dimensional simulation of aesthetic procedures, from facial rejuvenation to body contouring
- ◆ Generate realistic 3D models based on anatomical data and individual patient characteristics
- ◆ Visualize real-time projections of non-invasive and surgical treatments, enhancing aesthetic planning
- ◆ Implement analysis of parameters such as facial symmetry, body volume and skin regeneration to optimize results



You will enjoy a library full of supporting multimedia resources such as interactive summaries, real clinical case studies or explanatory videos. Enroll now!"

04

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

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TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want”

Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

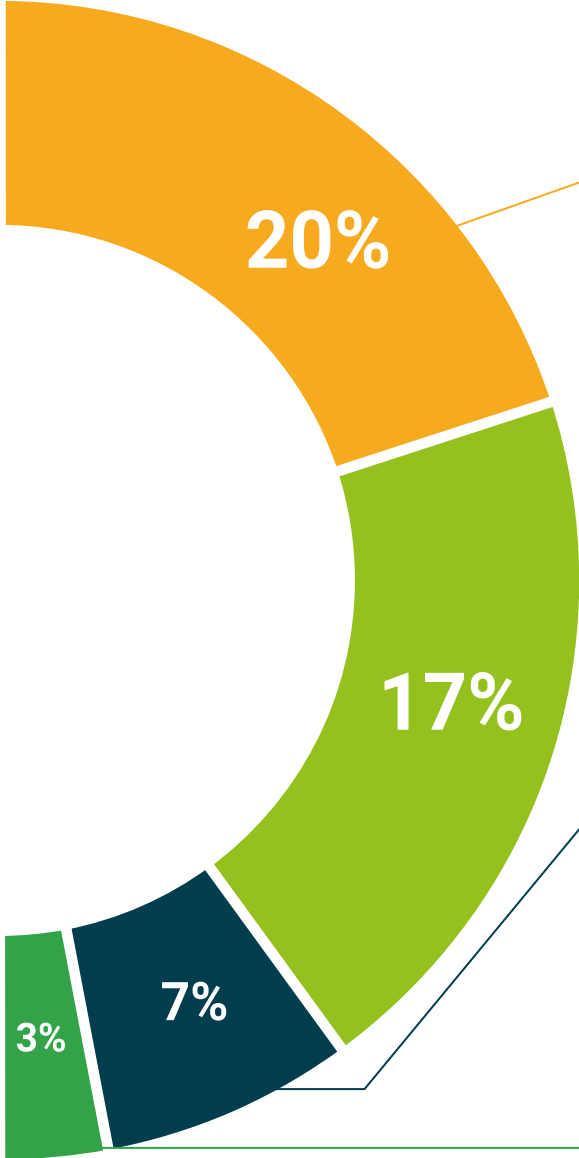
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



Classes

There is scientific evidence suggesting that observing third-party experts can be useful.
Learning from an expert strengthens knowledge and memory, and generates confidence for future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.



05

Teaching Staff

TECH's main objective is to offer the most complete, up-to-date and pragmatic university programs on the academic scene. For this reason, it carries out an exhaustive process to form each of its teaching staff. Thanks to this effort, this Postgraduate Certificate has the collaboration of renowned specialists in the field of Modeling and Simulation in Aesthetic Medicine. These professionals have reflected in the didactic materials both their comprehensive knowledge of this subject and their years of work experience. In this way, the graduates will enter into an intensive experience that will substantially improve their regular clinical practice.





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Get up to date in Modeling and Simulation in Aesthetic Medicine by the best experts in the field. Launch your professional career with TECH!"

Management



Dr. Peralta Martín-Palomino, Arturo

- ♦ CEO and CTO at Prometheus Global Solutions
- ♦ CTO at Korporate Technologies
- ♦ CTO at AI Shepherds GmbH
- ♦ Consultant and Strategic Business Advisor at Alliance Medical
- ♦ Director of Design and Development at DocPath
- ♦ Doctorate in Psychology from the University of Castilla La Mancha
- ♦ Doctorate in Economics, Business and Finance from the Camilo José Cela University
- ♦ Doctorate in Psychology from University of Castilla La Mancha
- ♦ Master's Degree in Executive MBA from the Isabel I University
- ♦ Master's Degree in Sales and Marketing Management from the Isabel I University
- ♦ Expert Master's Degree in Big Data by Hadoop Training
- ♦ Master's Degree in Advanced Information Technologies from the University of Castilla La Mancha
- ♦ Member of: SMILE Research Group



Professors

Mr. Popescu Radu, Daniel Vasile

- ◆ Independent Specialist in Pharmacology, Nutrition and Dietetics
- ◆ Freelance Producer of Didactic and Scientific Content
- ◆ Nutritionist and Community Dietitian
- ◆ Community Pharmacist
- ◆ Researcher
- ◆ Master's Degree in Nutrition and Health from the Open University of Catalonia
- ◆ Master's Degree in Psychopharmacology from the University of Valencia
- ◆ Pharmacist from the Complutense University of Madrid
- ◆ Nutritionist-Dietitian by the European University Miguel de Cervantes

Mr. Del Rey Sánchez, Alejandro

- ◆ In Charge of Implementing Programs to Improve Tactical Emergency Care
- ◆ Degree in Industrial Organization Engineering
- ◆ Certification in Big Data and Business Analytics
- ◆ Certification in Microsoft Excel Advanced, VBA, KPI and DAX
- ◆ Certification in CIS Telecommunication and Information Systems

Ms. Del Rey Sánchez, Cristina

- ◆ Talent Management Administrator at Securitas Seguridad España, S.L.
- ◆ Extracurricular Activities Center Coordinator
- ◆ Tutor and pedagogical interventions with Primary and Secondary Education students
- ◆ Postgraduate in Development, Delivery and Tutoring of e-Learning Training Actions
- ◆ Postgraduate in Early Childhood Care
- ◆ Degree in Pedagogy from the Complutense University of Madrid

06 Certificate

The Postgraduate Certificate in Clinical Data Processing for Predictive Modeling in Aesthetic Medicine guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”

This private qualification will allow you to obtain a **Postgraduate Certificate in Modeling and Simulation in Aesthetic Medicine** endorsed by **TECH Global University**, the world's largest online university.

This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Modeling and Simulation in Aesthetic Medicine**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development languages
virtual classroom



Postgraduate Certificate
Modeling and Simulation
in Aesthetic Medicine

- » Modality: online
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- » Accreditation: 6 ECTS
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- » Exams: online

Postgraduate Certificate

Modeling and Simulation in Aesthetic Medicine