

Fady M. Morcos  
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**EDUCATION**     **The University of Texas at Austin, Austin, Texas**

Ph.D. Aerospace Engineering [Astrodynamics], December 2010

- Developed new analytical, numerical and graphical techniques, based on dynamical systems theory, to achieve fuel-optimal transfer trajectories in the Concentric and Bi-Circular Restricted Four-Body Problem.

**University of Southern California, Los Angeles, California**

M.Sc. Aerospace Engineering [Astronautics], August 2003

- Developed a comprehensive mission analysis and design study for a Trans-Lunar Space Tourism Vehicle that was featured in USC Engineer Magazine.

B.Sc. Aerospace Engineering [Astronautics], December 2001

- Developed a thorough mission analysis and design blueprint for a space-borne SAR remote sensing satellite for archeological research.

**EXPERIENCE**

01/16 - Present

**Associate Professor of Practice, The American University in Cairo, Cairo, Egypt**  
**Joint Position School of Science & Engineering & Center for Learning and Teaching**

- Scientific Thinking Course Coordinator
  - Work with sixteen other instructors on co-designing learning outcomes, assessment tools, course content, class activities, and course policies to ensure quality and consistency across all 25 sections.
  - Coordinates course logistics, including policies, scheduling, evaluation, recruiting and hiring faculty, projections and enrollments.
- Center for Learning and Teaching Faculty
  - Design and facilitate faculty professional development workshops on various teaching and learning themes, focusing on Learning Experience Design, Teaching Innovation and Instruction Technology.
  - Provide teaching consultations to faculty members, and work with them to design a student-centered approach to teaching. including learning outcomes, assessment tools, course content, class activities and course policies.

09/15 - Present

**Adjunct Associate Professor, Zewail City of Science and Technology, Cairo, Egypt**

- Co-designed the Aerospace Engineering curriculum and study plan.
- Lead a team of students and researcher to design and build Egypt's first hyper spectral remote sensing satellite.
- Design and facilitate core aerospace courses, including Astronautics, Orbital Mechanics, Space Mission Design and Spacecraft Attitude Dynamics & Control.

## PREVIOUS EXPERIENCE

09/12 - 12/15

### Assistant Professor, The American University in Cairo, Cairo, Egypt

- Successfully integrated blended learning, flipped classroom, active learning, social media, project-based learning and team-based learning in my classroom.
- Supervised undergraduate thesis and graduate student research in the field of space mission design and satellite technology.
- Designed curriculum and course workbook for Creative Thinking & Problem Solving, introducing students to tools, techniques and frameworks for creativity, innovation, entrepreneurship, gamification, and problem-solving.

8/05 - 08/10

### Research Assistant, The University of Texas at Austin, Austin, TX

- Designed and implemented key algorithms for a state of the art NASA Spacecraft Trajectory Optimization software platform, named Copernicus.
- Modeled, analyzed and optimized several interplanetary space missions for the NASA Low Thrust Trajectory Tool (LTTT) division.
- Received NASA Space Act Award for Innovative and Creative Development, and NASA JSC Exceptional Software Award.
- Copernicus received NASA Software of the Year Award in 2009. It is currently being used by NASA in designing the Return to the Moon mission.

## SKILLS

### Computer:

- Proficient in FORTRAN, Visual Basic and Matlab
- Expert in Microsoft Excel Modeling and Programming
- Skilled in C++, Adobe Illustrator and I-DEAS CAD Software

### Languages:

- Native fluency in English and Arabic
- Basic knowledge of Italian and French

## HONORS

NASA JSC Exceptional Software Award (2009)

NASA Space Act Award (2007)

## CONFERENCES & WORKSHOPS

Teaching Professor Conference, Washington, DC, June 2016

Harvard Continuing Education - Design Thinking, Cambridge, MA, March 2016

SXSW-EDU Conference, Austin, TX, March 2016

AMICAL Consortium, Athens, Greece, May 2014

McKinsey Insight Engineering and Science Program, Chicago, IL, June 2010

AIAA Astrodynamics Specialist conference, Pittsburgh, PA, August 2009