Bassem M. Sabra, Ph. D.
Beirut, LEBANON
Tel.: 00-961-03-630884, Email: bsabra@thepearlhighschool.org

Fields of Expertise:

- Teaching: Undergraduate and graduate physics and astrophysics courses: classical & analytical mechanics, introductory astronomy, introductory astrophysics, electricity & magnetism, optics, thermodynamics, modern physics, quantum mechanics, statistical mechanics, general relativity, radiative processes, observational astrophysics, stellar astrophysics, astrophysics of galaxies, and cosmology.
- Curriculum Development, Instructional Design, Program Reviews, Assessment Development, Outcomes Assessment, and Innovative Teaching Methods.
- Computing, Data Analysis, & Simulations: Python, IDL, C++, MatLab, Mathematica, Java, Fortran, Machine Learning (in Python), Arduino, astrophysics-specific packages such as IRAF, CLOUDY, XSPEC, CIAO, and SAS, and astronautics-specific packages such as AGI's STK and NASA's GMAT, and quantum computing packages such as QISKIT.
- Research: Astrophysics of active galactic nuclei (AGN) and supermassive blackholes, cosmology, general relativity, IR/optical/UV/X-ray spectroscopy, photoionization modeling. Refereed for top astrophysics journals and NASA.

Positions: (selected)

- Professor of Physics & Chairperson of the Dept. of Physics & Astronomy at a major university in Lebanon.
- Regular Associate: The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy: 1 January 2013 – 31 December 2018.

Education:

- Ph.D. in Physics, "The Power Sources of Cooling Flow Filaments and LINERs," Ohio University, August 2000 (USA).

Continuing Education & Skills:

- Certificate of Attendance: "FSCJ Online Instruction Training Program," (Beirut, Sept.-Oct. 2021): Coordinated by the HECD program and funded by USAID.
- Certificate in "Applied Smallsat/Cubesat Engineering Development," TSTI (tsti.net, Beirut, Summer 2019): Coordinated by the Lebanese National Council for Scientific Research (CNRS - Lebanon)
- Certificate in "Technology of Nanosatellites for Space Applications in Low Earth Orbit (LEO)," Istanbul Technical University – Space Systems Design and Test Laboratory (Beirut, July 2019): Coordinated by the CNRS – Lebanon
- Training in "UHF/VHF Satellite Ground Station Installation," Istanbul Technical University – Space Systems Design and Test Laboratory (Beirut, August 2019): Coordinated by the CNRS - Lebanon
- Small telescope operations (computer-controlled with CCD camera and spectrograph).
- Languages: Fluent in English and Arabic, basic knowledge of French.

My MIT BLOSSOMS Blended Teaching Module on Gravity Assists:

https://blossoms.mit.edu/videos/lessons/gravity_assist_or_stealing_planets_angular_momentum_and_getting_away_it

My research record:

https://ui.adsabs.harvard.edu/search/q=sabra%2C%20b.%20m.&sort=date%20desc%2C%20bibcode%20desc&p_=0