

Web Page:	https://studyinmexico.tec.mx/
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Undergraduate Research Program

Project Name	Quantum Optics, Optical Physics
Campus & Location in Mexico	Blas Manuel Rodríguez Lara
Faculty	Engineering and Science
Research Area	<p>Our undergraduate research projects are directly related to our research interest: At the fundamental level, we are interested in exploring the interaction between radiation and matter. We study fundamental models to describe their spectral characteristics, looking for changes in structure like quantum precursors of phase transitions or spectral collapse. At the simulation level, we are interested in the classical and quantum simulation of these fundamental models with optical systems in order to explore the dynamical regimes and assess their value for communication or information processes.</p> <p>At the design level, we are interested in the use of symmetries to produce desired behavior, for example, routing or entangling, in experimental classic and quantum electrodynamics platforms; e.g., photonic integrated circuits, optomechanical systems, superconducting-, cavity-, waveguide-, or ion-trap-QED.</p> <p>Students interested in joining our research efforts are encouraged to review our most recent manuscripts to gain knowledge on our current lines of interest. This allows us to personalize and tailor a short, medium or long-term research project that takes advantage of the overlap between the student and our research interest.</p>
Research Responsible	
Description of the Project	
Training Provided	We offer the training in abstract algebra, optics, quantum mechanics and quantum optics necessary to reach the goals of each specific project.

Offered during:

SUMMER

☒

WINTER

☐

SEMESTER

☒

Student

Tasks/Responsibilities	The student will design his own research plan with time schedule upon discussion with the instructor. Conduct basic research, produce reports in a continuous and timely manner. Communicate the obtained results.
Required Language Proficiency	Able to communicate in Spanish or English.
Required Skills and Abilities	Minimum skills: Modern Physics, Introduction to Quantum Mechanics, Linear Algebra, Differential Equations
Other Documents	<ol style="list-style-type: none"> 1) Being at least in your 2nd year of bachelor 2) Accumulative grade point average (GPA) 2.5 3) Official Transcript 4) 2 letters of recommendation of faculty members 5) Resume 6) Letter of intention explaining the reason why you would like to participate in the research program