

Web Page:	https://studyinmexico.tec.mx/
Contact Information:	studyinmexico@itesm.mx

Undergraduate Research Program	
Project Name	Application of Phase Change Materials to Reduce Energy Consumption in Buildings
Campus & Location in Mexico	Monterrey
Faculty	Engineering
Research Area	Energy and Climate Change
Research Responsible	Carlos Iván Rivera Solorio
Description of the Project	<p>Buildings globally are responsible for about 40% of primary energy consumption and a third of greenhouse gas emissions. In Mexico, the building sector (commercial, residential and industrial) represents about 20% of energy consumption. A large percentage of this energy is required for air conditioning to maintain proper comfort conditions. There is great interest in the construction sector in developing and testing different technologies to reduce the gain in thermal loads through the building envelope. Phase change materials (PCM) is a developing technology that is being heavily investigated in recent years as an option to reduce energy consumption in buildings. This material has different melting temperature ranges, which allows it to absorb and release thermal energy in the form of latent and sensible heat. The PCM is placed as part of the building envelope in order to reduce internal loads and delay the periods of maximum temperature inside the building. The research group has been studying experimentally and numerically the behavior of the material and its potential application in buildings. The objective of the project is to evaluate the performance of different phase change materials in combination with other passive strategies in a pair of experimental modules located in the Monterrey campus. The modules are fully instrumented to monitor temperatures inside and outside the envelope, heat flux and energy consumption.</p>
Training Provided	Analysis of scientific articles;Elaboration / execution of projects;Participation in laboratories

Modality	In Person
Offered During	Summer (5 weeks);Winter (5 weeks);Semester

Student	
Tasks/Responsibilities	Generation of experimental scenarios. Monitoring information from scenarios. Analysis of data. Research and writing scientific articles.
Required Language Proficiency	Spanish (Advanced);English (Medium);English (Advanced)
Required Skills and Abilities	Communication, teamwork, problem solving, searcher.
Other Documents Required to APPLY for an Internship	<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