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

Undergraduate Research Program

Project Name	Modeling the Pandemic
Campus & Location in Mexico	Monterrey
Faculty	Engineering and Sciences
Research Area	Signal Processing
Research Responsible	Cesar Vargas Rosales
Description of the Project	In difficult situations such as in the COVID-19 pandemic, it is imperative that we understand the propagation behavior in order to implement social measures and policies that would help us to address the situation. It has been seen throughout these months that we are vulnerable to the virus and that the policies that are implemented have an impact that is not necessarily positive. In order to determine policies and measures that could have a strong positive impact today and for future events of the same magnitude, we need to develop models that would help us understand the behavior and would help us to predict with good levels of certainty the consequences of our decisions. In this project we will try to develop mathematical models such as those of signal processing and data science with a discrete-time based design that could adapt to the dynamics of the propagation of the pandemic. We will analyze the data that is available worldwide in order to perform a forensic analysis that would allow us to establish clear rules for modeling that will help us to build a framework for the social measures that need to be implemented. In the experimental tasks of the project, we will develop an App that allows us to determine risk contacts or proximity by creating risk maps that will provide information about possible future outbreaks.
Training Provided	Simulations, statistical modeling, writing of scientific documents

Offered during:

SUMMER		WINTER		SEMESTER	
	X				X

Student

Tasks/Responsibilities	To characterize statistically data from COVID-19. To apply forensic analysis and information about social measures to determine dynamics of pandemic. To help implement risky contact App and analyze data obtained from it
Required Language Proficiency	Proficiency writing, reading and speaking in English
Required Skills and Abilities	Programming, basic statistics and use of search tools
Other Documents	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