

St. Mary's Pre-Engineering Summer Program in Robotics, Programming and Operations Research

Ozgur Aktunc, Ph.D. - Assistant Professor of Software Engineering
Gopal Easwaran, Ph.D. - Assistant Professor of Industrial Engineering
Wenbin Luo, Ph.D. - Associate Professor of Computer Engineering

Department of Engineering, St. Mary's University

St. Mary's University



- Founded in 1852, St. Mary's University is the first institution of higher learning in San Antonio.

St. Mary's University

- Located on 135 acres northwest of downtown San Antonio
- Diverse student population of nearly 4,000
- Home to five schools: Humanities and Social Sciences, Bill Greehey School of Business, Science, Engineering and Technology, Graduate, and Law.

Pre-Engineering Summer Program

- Started in 2010 with the grant from Texas Higher Education Coordinating Board.
- This is the third year of the program.
- Goals of the program
 - Enhance high school and middle school students' interest in engineering programs
 - Reach out to female and minority students
 - Last year, we had 43 students.
 - 14 female students
 - 15 Hispanic, 6 African-American, and a total of 29 minority students

Program Activities

- Robotics with MindStorm Kits
 - Teams projects
 - Using RobotC language to implement robotics
- Programming using Alice and Java
 - Individual projects
 - Virtual worlds, games, and animations
- Operation Research in everyday life
 - Solving operations research problems with practical applications
 - Solving problems using MS Excel and ProModel simulation software
- Engineer speakers from industry and academia
- St. Mary's staff from admissions and financial aid

Program schedule from 2011

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 ⁰⁰	Welcoming Students	Alice Lecture/Lab	Alice Lecture/Lab	Alice Lecture/Lab	Alice Lecture/Lab	Alice Lecture/Lab
10 ⁰⁰	Campus Tour					
11 ⁰⁰	Social Time Lunch	Engineer Speaker/ Lunch	Lunch	Scientist Speaker/ Lunch	Staff Speaker: University Applications/ Financial Aid Lunch	Lunch
12 ⁰⁰	Operations Research Lecture/Lab	Operations Research Lecture/Lab	Operations Research Lecture/Lab	Operations Research Lecture/Lab	Operations Research Lecture/Lab	Reception
1 ⁰⁰						
2 ⁰⁰	Mindstorm NXT Robot Lecture/Lab	Mindstorm NXT Robot Lecture/Lab	Mindstorm NXT Robot Lecture/Lab	Mindstorm NXT Robot Lecture/Lab	Mindstorm NXT Robot Lecture/Lab	
3 ⁰⁰						

New educational module in 2012

- Programmable electronics using SparkFun Inventor's Kit
 - Sample experiment: Light sensitive burglary alarm system with ON/OFF control and sound output

