

Senior Capstone Projects

Senior Capstone Projects represent the culmination of the educational experience, integrating the classroom with real world problems. The students handle open-ended engineering and computational problems whose solutions require a synthesis of engineering knowledge, computational analysis, creativity, market needs, safety and esthetics. Projects supervised by instructors and industry mentors.

Panel of Judges

Representatives from Civil Engineering, Electrical and Computer Engineering, Mechanical Engineering, Computer Science departments faculty and External Advisory Board members.

Supervising Faculty

- Dr. Ahmet Zeytinci, P.E., Professor, Civil Engineering
- Dr. Pradeep Behera, PE, Professor and Chair, Civil Engineering
- Dr. Bryan Higgs, Assistant Professor, Civil Engineering
- Dr. Lei Wang, P.E., Assistant Professor, Civil Engineering
- Dr. Hossain Azam, P.E., Assistant Professor, Civil Engineering
- Dr. Esther Ososanya, Professor, Electrical and Computer Engineering
- Dr. Amir Shahirinia, Assistant Professor, Electrical and Computer Engineering
- Dr. Jiajun Xu, Associate Professor, Mechanical Engineering
- Dr. Pawan Tyagi, Associate Professor, Mechanical Engineering
- Dr. Kate Klein, Associate Professor, Mechanical Engineering
- Dr. Max Denis, Assistant Professor, Mechanical Engineering
- Dr. Lara Thompson, Associate Professor, Mechanical Engineering
- Dr. Devdas Shetty, P.E., Professor and Dean

Acknowledgements

- Lockheed Martin
- National Aeronautics and Space Administration
- Airforce Research Laboratory
- National Science Foundation (NSF)
- National Nuclear Security Administration (NNSA)
- Oakridge Enhanced Technology and Training center
- Office of Naval Research (ONR)
- Hung Ha
- Pablo Sanchez Guerrero
- Gebretensae Tzadu
- GTA: Jaime Rios



SENIOR CAPSTONE PROJECT PRESENTATIONS

Civil, Electrical, and Mechanical Engineering
Friday, April 29, 2022
10:30 AM – 4:30 PM
Student Center Ballroom B



COMPUTER SCIENCE AND INFORMATION
TECHNOLOGY (Advisor: Dr. Li Chen)

CIVIL ENGINEERING

Planning and Design of Civil Engineering
Systems for the Latitude Sub-division

Maksim Bahdanovich, Quilmar Bercian, Andrae Harris, Xavier Harris, Neokendebecke Ituka, Shehabaldin Mohamed, Moges Regassa

Natinael Zaga, **Advisors: Dr. Pradeep Behera, Dr. Ahmet Zeytinci, Dr. Bryan Higgs, Dr. Lei Wang, Dr. Hossain Azam**

Planning and Design of Civil Engineering
Systems for the Boosterville Sub-division

Aldaire Bazanalegria, Richmondlin Calapan, Abdelmoughit Eljahid, Chavar Henry, Lirane Kertesse Mandjoupa, Horace Mitchell, Mehmet Ozkaraaslan, Assefa Tadesse

Advisors: Dr. Pradeep Behera, Dr. Ahmet Zeytinci, Dr. Bryan Higgs, Dr. Lei Wang, Dr. Hossain Azam

ELECTRICAL AND COMPUTER
ENGINEERING

Autonomous Dry Vacuum Cleaner for
Enriched Uranium Oxide

TaizeRee Walker and Ibsa Gala

Faculty Advisor: Dr. Esther T. Ososanya
External Advisor: Dr. Ashley C. Stowe

Rescue Rover AV

Luis F. Hernandez, Carlos Velazquez, and Gavin Robinson
Faculty Advisors: Dr. Esther T. Ososanya and Dr. Amir Shahirinia

MECHANICAL ENGINEERING

Design and Development of Composite
Tape Spring for Deployment Mechanism
of Solar Array

Evan Preller, Brandon Botchway, Joshua Dillard, Kelechi Iwuchukwu

Advisors: Dr. Jiajun Xu

Design and Development of Passive
Thermal Management System for
Electromechanical Actuators in All-
electric Aircrafts

Andoniaina Randriambololona, Kymani Brown, Kuuku Botchway

Advisors: Dr. Jiajun Xu, Dr. Mehdi Kabir

Design of an Improved Vertical Spiral
Closed Loop Geothermal Heat Exchanger

Dorian Davis, Tarun Malhotra , Orlando Bowman, Deshawn Adams
Advisors: Dr. Jiajun Xu, Dr. Mehdi Kabir

BIO-MEDICAL ENGINEERING

Design and Development of a Low-Cost
Arduino Controlled Bag-Mask Ventilator

Justin An, Oshin Wilson, Tai Rosebure, Abdullah Almaghlouth

Advisors: Dr. Max Denis, Dr. Jiajun Xu