FIU Engineering & Computing

Mechanical and Materials Engineering

2018 - 2019 ANNUAL REPORT
Mechanical & Materials Engineering

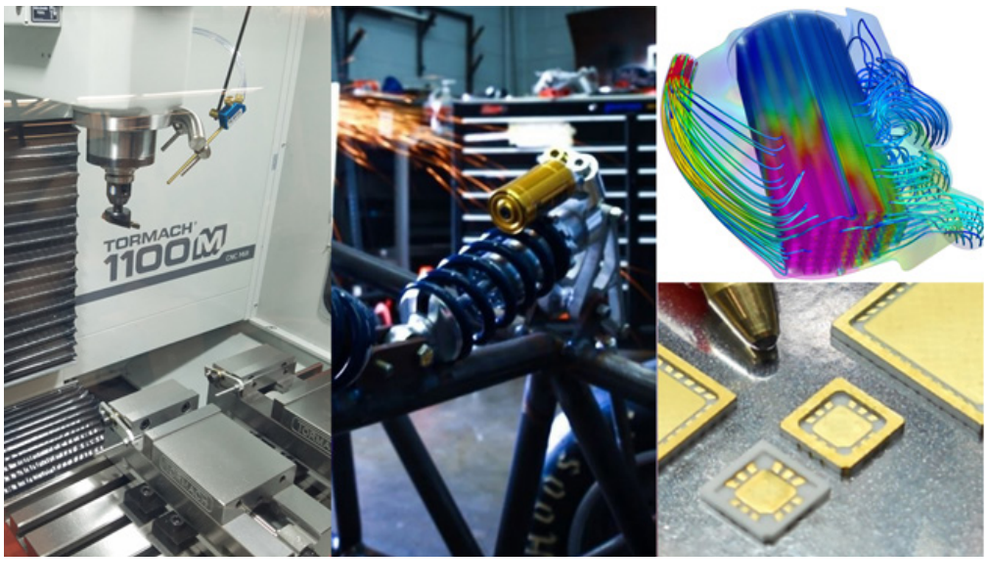
A MESSAGE FROM THE MME DEPARTMENT CHAIR

Dear Friends of FIU Mechanical and Materials Engineering:

I take this opportunity to share the annual report of the department for the year 2018-19. It was a very successful year on all fronts with the hiring of new faculty members, lab manager and staff member, creation of an e-learning classroom, and upgrade of teaching lab equipment. The department also saw significant growth in key performance metrics, including our 4- year FTIC graduation rate, research awards and expenditures, and patents. Our faculty and staff won awards, including NSF CAREER and Staff Excellence Awards, respectively. Our students and alumni continue to win honors at professional society meetings and conferences. They are the true flag bearers and ambassadors of the MME department and FIU. The department was visited by several leading researchers and academicians to deliver talks during 2018-19. The support received from our National Industrial Advisory Board (NIAB) is critical to the success of MME Senior Design students and the department. As we embark on the challenge of taking the MME department to even greater heights, we will continue seeking the guidance and advice of our friends and well-wishers in this journey. I also take this opportunity to thank students, colleagues, staff members, and CEC and FIU administration for their continuing support.

FIU's Next Horizon Campaign is to seek support from FIU Alumni, corporations and foundations to achieve a goal of $750 million for creating a major impact on student success and research and discoveries. Since Next Horizon focuses on increasing scholarships, student support, and research, it is a great opportunity to invest in the future of South Florida and the Nation. The Department of Mechanical and Materials Engineering encourages support from all its friends to help the Next Horizon campaign.

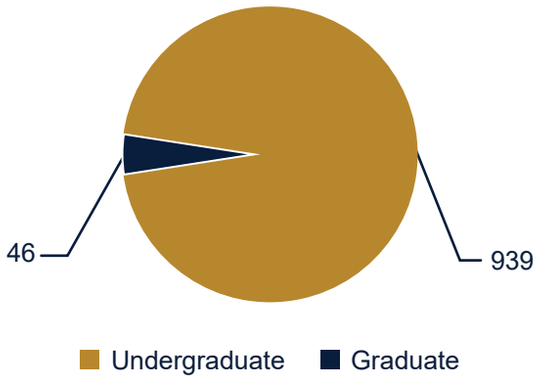
NEXT HORIZON
The Campaign for FIU



FACTS & FIGURES 2018 -2019

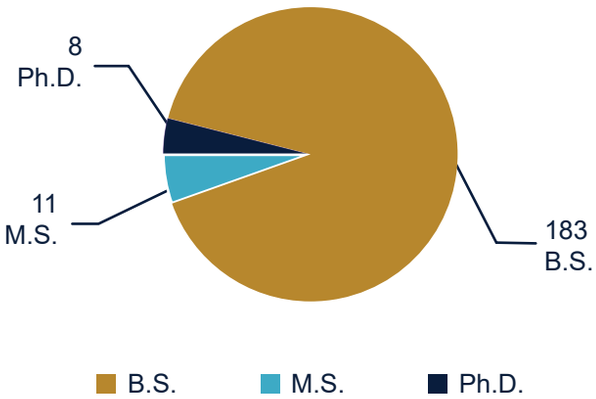
ENROLLMENTS • 985

(FY 18-19)



DEGREES AWARDED • 203

(FY 18-19)



DEGREE PROGRAMS
- BS in Mechanical Engineering
- Combined BS and MS in Mechanical engineering
- MS & PhD in Mechanical Engineering
- MS & PhD in Materials Science and Engineering

FACULTY

Full Professors	9
Associate Professors	5
Assistant Professors	4
Instructors	6
Emeritus Faculty	3

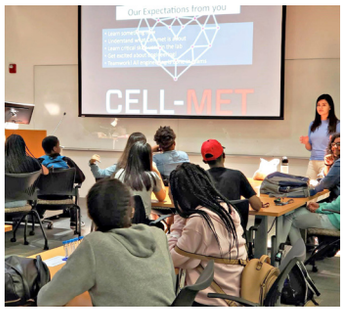
AREAS OF EXPERTISE
- Advanced Materials & Processing
- Computational Fluid Dynamics
- Manufacturing
- Nanotechnology
- Thermo-Fluids & HVAC

AFFILIATED LABORATORIES & CENTERS
- Advanced Ceramics Laboratory
- Advanced Materials Engineering Research Institute (AMERI)
- Center for Study of Matter at Extreme Conditions (CeSMEC)
- C-MEMS Laboratory
- Composites Laboratory
- Computational Fluids and Energy Sciences Laboratory
- Corrosion Laboratory
- Engineering Manufacturing Center (EMC)
- Fluid Structure Interaction Laboratory
- Mechatronics Laboratory
- Multidisciplinary Analysis, Inverse Design, Robust Optimization and Control Laboratory (MAIDROC)
- Nanomaterials Laboratory
- Plasma Forming Laboratory (PFL)
- Robotics & Automation Laboratory
- Sustainable Energy and Thermal Transport Systems Laboratory

RESEARCH

• Awards (FY 2017-18 & 2018-19)	$6.2 M
• Number of Active Grants	26
• Journal Articles	75
• Disclosures	29
• Patents filed	5
• Patents Awarded	4






FACULTY AND STAFF AWARDS

Dr. Zhe Cheng Receives Prestigious NSF Career Award

Dr. Zhe Cheng, Associate Professor, was awarded the 2019 Faculty Early Career Development (CAREER) Award from the National Science Foundation (NSF) for his research on functional ceramics.

For his CAREER project, Dr. Cheng is focused on generating new fundamental knowledge about a very important reaction involving hydrogen gas at the negative electrode of PC-SOFCs at temperatures relevant to operation. It also aims to develop new electrode materials that could further enhance the performance and robustness of PC-SOFCs. The knowledge from this project can be leveraged to other applications such as electrochemical energy storage, chemical production and sensors.

Dr. Norman Munroe Receives the International Association of Advanced Materials (IAAM) Medal

Dr. Norman Munroe, professor, was honored with the International Association of Advanced Materials (IAAM) Medal at the European Advanced Materials Congress in Stockholm, Sweden. The IAAM Medal is a prestigious international award given for notable and professional achievements that have enriched the development of the materials science and technology field.

Mabel Fernandez Receives the Staff Service Award Excellence

Mabel Fernandez, program coordinator, won the Staff Service Award for Excellence in 2018. Mabel has actively aligned her work at FIU with her passion to help others. She goes above and beyond the call of duty to assist faculty and students in need.

Tiziana Leoni Receives the CEC Staff Knowledge and Achievement Award

Tiziana Leoni, research coordinator, received the 2018-19 CEC Staff Knowledge and Achievement Award. Since she was hired in 2015, Tiziana has served FIU through several duties and positions, continuously strengthening her professional skills.

MME Department Receives $1M Grant from Department of Energy for Research and Training in Advanced Materials

The FIU Department of Mechanical and Materials Engineering received a $1M grant from the Department of Energy (DOE) for the new initiative known as the “Partnership for Research and Education Consortium in Ceramics and Polymers” (PRE-CCAP). The recipients of the grant, Dr. Arvind Agarwal and Dr. Benjamin Boesl, will collaborate with faculty and researchers at The University of Texas at El Paso (UTEP),Tennessee State University (TSU), Kansas City National Security Campus (KCNSC) and Los Alamos National Laboratory (LANL) to create a pipeline for the next generation of students to accomplish the mission of the DOE’s National Nuclear Security Administration (NNSA).

PRE CCAP
Partnership for Research and Education
Consortium in Ceramics and Polymers

FACULTY AND STAFF NEWS

New Faculty Hires

Dr. Kevin Boutsen: instructor, received his BS and PhD degrees in mechanical engineering from the University of Miami in 2012 and 2016, respectively. He also earned an MS in advanced motorsport engineering from Cranfield University in 2013. His research interests are in high performance vehicles, thermodynamics, engines, aerodynamics and vehicle dynamics in addition to his expertise in racing cars.

Dr. Dwayne McDaniel: associate professor, received his BS in aerospace engineering from University of Florida and his MS and PhD in engineering mechanics also from University of Florida. Dr. McDaniel has approximately twenty years of experience related to research and analysis in mechanical and aerospace engineering and is a registered Professional Engineer in the State of Florida. His research interests include robotics, structural health monitoring, multibody dynamics and composites.

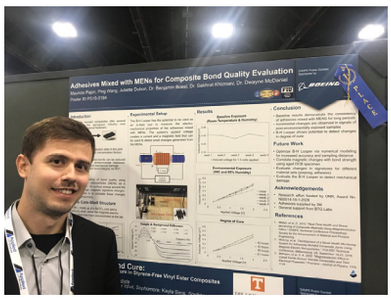
Dr. Darryl Dickerson: assistant professor, received his BS in biomedical engineering from Tulane University and his PhD in 2009 from Purdue University. He has extensive research experience in biomaterials development, orthopedic tissue biomechanics and tissue engineering. His research interests are in mechanical characterization of biological interfaces, design of bioinspired materials, modeling of biological interfaces, natural biopolymer-metal complexation, model-informed in vivo bioreactor biomaterial design and biophysical control of induced pluripotent cells.

New Departmental Hires

Dr. Meer Safa: Laboratory Manager for undergraduate teaching in the MME department. Dr. Safa received his Ph.D. in Materials Science and Engineering from Florida International University in 2018. Previously, he finished his M.S. in Materials Science and Engineering from the Royal Institute of Technology (KTH), Sweden and B.S. in Metallurgical Engineering from Bangladesh University of Engineering & Technology (BUET). He has work experience in steel making plant as a process engineer in Bangladesh. Dr. Safa has published several research papers in the field of batteries.

Giselle Alvarez: has joined MME department as a Program Assistant. Giselle Alvarez is a recent Miami Dade College Graduate where she obtained her Associates Degree in business. Currently, she is enrolled at FIU College of Business pursuing her bachelor's degree in Real Estate and will aim to achieve a master's in construction management. Giselle has worked for the university since 2018; initially, she began her academic career as a student assistant in the Advising Center where she became familiar with the different engineering programs offered to our students. She later gained more experience pertaining to the College at her previous role as office manager for EIC.

STUDENT NEWS AND SUCCESS

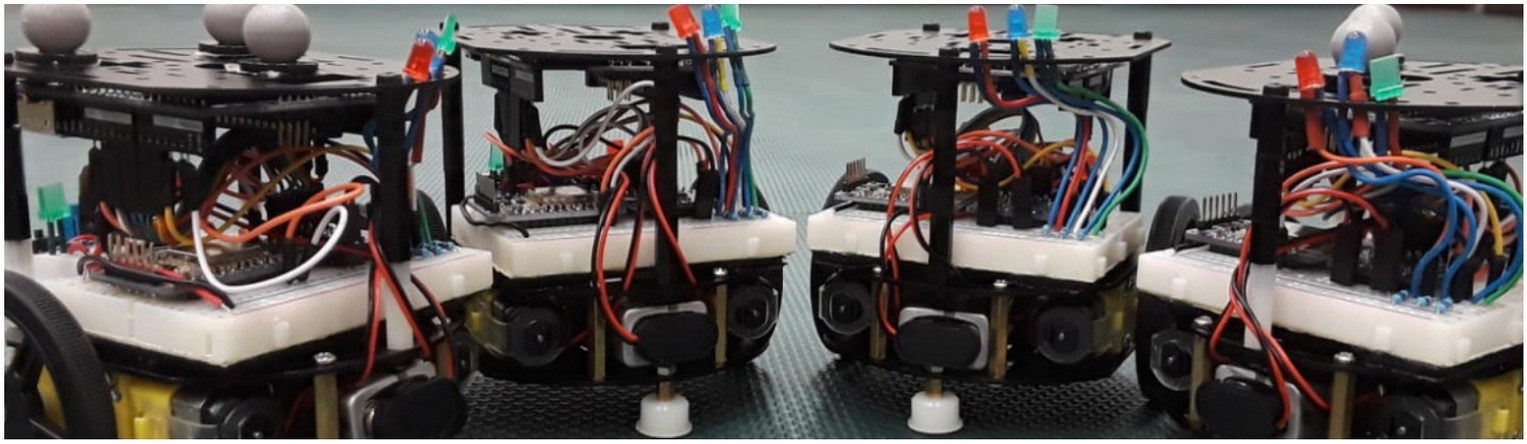


MME Undergraduate Students Win First Place at the Society for the Advancement of Material and Process Engineering (SAMPE) annual Meeting

MME undergraduate students Mauricio Pajon and Juliette Dubon won 1st place in the student poster competition at the SAMPE 2019 meeting in Charlotte, NC. Their poster was titled "Adhesives Mixed with MENs for Composite Bond Quality Evaluation."

MME Alumnus *Daniel Martinez* Represents FIU in the International Robotics Program at Tohoku University

Daniel graduated with a bachelor's in mechanical engineering from the MME department at FIU. Recently, he was admitted to the PhD program at Georgia Institute of Technology where he will be funded by the National Science Foundation (NSF) Research Traineeship Program (NRT) focused on medical and rehabilitation robotics. He was also awarded an honorable mention for the NSF Graduate Research Fellowship Program (GRFP). Daniel was among 50 students worldwide accepted to an international two-week robotics program at Tohoku University in Japan because of his dedication to learning Japanese and his diverse skills, experience and passion for robotics, which are all linked to his learning experience and coursework at FIU. As an FIU alumnus, Daniel wishes to continue his involvement with FIU and mentor students to help them be Worlds Ahead.



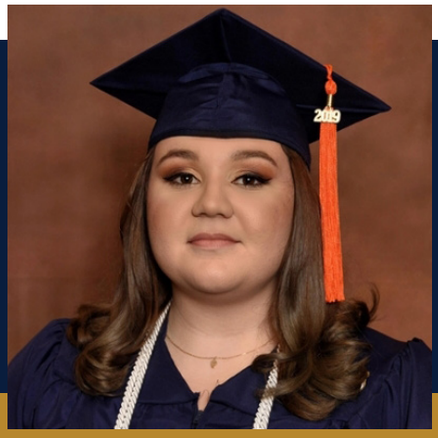
MME Alumnus *Sara Rengifo* Receives Prestigious NASA Trailblazer Award

Mechanical and Materials Engineering alumna Sara Rengifo was awarded the prestigious NASA Trailblazer Award. The Trailblazer Award is presented by NASA employees in any field supporting human space flight during the first seven years of their career. Sara was selected for this award based on her ability to identify new, creative solutions to space flight as well as her collaborative effort to achieve a goal in support of NASA's mission. In this picture, Sara is with astronauts Harrison Schmidt (the U.S. senator and retired NASA astronaut is the most recent living person to have walked on the Moon) and Rex Wilheim (NASA astronaut), and MSFC Center Director Jody Singer (far left).

Female Mechanical Engineers Breaking Barriers

MME graduates Ariana Bueno, Gabriela Gutierrez and Rossana Zotti, were recognized as Worlds Ahead graduates at the Spring 2019 commencement ceremony. This is the first time FIU recognized nine female engineering and computer science graduates at a commencement ceremony.

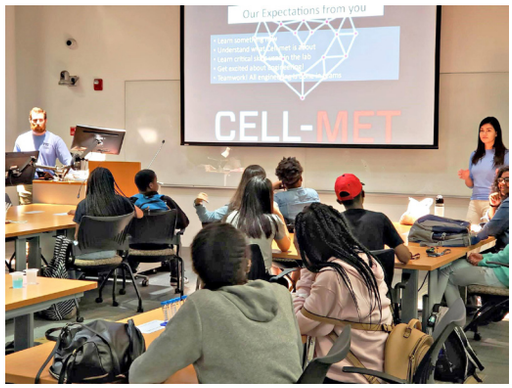
Ariana Bueno
Plans to pursue a Ph.D. in applied physics and hopes to one day become an astronaut and a professor



Rossana Zotti
Is currently working as a research and development engineer at Boston Scientific in Massachusetts.

Gabriela Gutierrez
Completed an internship at Boeing, and they offered her a job as a flight test engineer starting summer 2019.

MME Undergraduate Students Presents CELL-MET Research to High School Students



As part of the Upward Bound program at FIU, undergraduate students Ivanna Corzo and Justin Fitch presented the CELL MET research to participating high school students. FIU's Upward Bound is a federal TRIO program designed for students with academic potential who need additional preparation and motivation to succeed in high school and into college. The program provides ongoing academic preparation, counseling and enrichment activities. Students may participate in the program from the time they enroll in the spring of 8th grade until they enter their first year of college.

FIU Offers research opportunities at Plasma Forming Laboratory (PFL) as part of PRE-CCAP's program

The Research Experiences for Undergraduates (REU) hired undergraduate students enrolled in a STEM academic program (Mechanical and Materials Engineering or related fields) to perform different research activities during their nine-week stay at FIU. PRE-CCAP REUs focused their research on material characterization, advanced materials processing, ceramics and spark plasma sintering. During summer 2019, undergraduate students Carolina Ramos, Dariana Ramos, Kristal Feliciano and Connie Ly participated in the program and successfully presented their research to the College of Engineering and Computing faculty, postdoctoral researchers, staff and students. MME mentors are Dr. Tony Thomas, Dr. Cheng Zhang, Dr. Lu Xiaolong, Ms. Jenniffer Bustillos and Mr. Pranjal Nautiyal.

MME STUDENT ORGANIZATIONS

FIU-FSAE

The FIU-FSAE student chapter participated in the 2019 FSAE Competition held in Michigan. Despite many technical challenges facing the team this year, they were able to successfully tackle them and continue throughout the competition by maintaining a positive attitude and optimistic team spirit. Panther Motorsports will compete again next year at the SAE Michigan 2020 Competition at the Brooklyn International Speedway.

FIU-AERO

The Florida International University Aerospace Engineering Club competed in the 2019 SAE Aero Design East in Fort Worth, Texas. They entered the competition in the Micro Class section. AERO alumni members actively participated in assisting the team with design, manufacturing and production of the competition plane.
FIU AERO will be participating in the upcoming 2020 SAE Aero Design East Student Design Competition to be held in Lakeland, FL.

FIU-ASME

During the 2018-19 academic year, FIU ASME engaged in various outreach activities. The ASME team collaborated with FIU AERO to take 15 AERO and ASME members to launch their rockets in Palm Bay, Florida. All 15 students were able to successfully complete the required training, create, launch, retrieve their rockets and triumphantly attain their L1 National Association of Rocketry Certificates. FIU-ASME engaged in another outreach activity including helping Girl Scout troop 10529 earn an engineering badge and participate in the FIU Engineering Expo.

FIU-FES

The FIU Florida Engineering Society (FES) partnered with FIU-Engineers on Wheels and Break Through Miami to inspire the young minds of 5th and 6th
graders through active demonstration of Additive Manufacturing and 3D printing.
In addition to that, FIU FES received the 2018 - 2019 FES Most Active Student Chapter Alpha/Beta Award as well as first place for FES Chapter Excellence.

SENIOR DESIGN PROJECT SHOWCASE

The senior design capstone project is broken into two courses: EML 4551, Ethics Study and Design Organization, a one-credit course, and EML 4905, Senior Design. In the first course on Design Organization, students are organized into design teams, select a design project and complete the preliminary design. In Senior Design, details pertaining to their final design project will be completed with either a prototype (full-scale, miniature, functional or possibly a mock-up), or a set of engineering drawings only if a large system is designed, for example an HVAC system.
The capstone design project emphasizes teamwork as an integral part of the design process. All the projects are presented in a department wide conference at the end of the semester and evaluated by the Industrial Advisory Board and faculty. The spirit of the Capstone Design Project is provided by ABET (the Accreditation Board of Engineering and Technology), which accredits all national engineering programs.

FALL '18

Senior I
30 TEAMS

Senior II
14 TEAMS

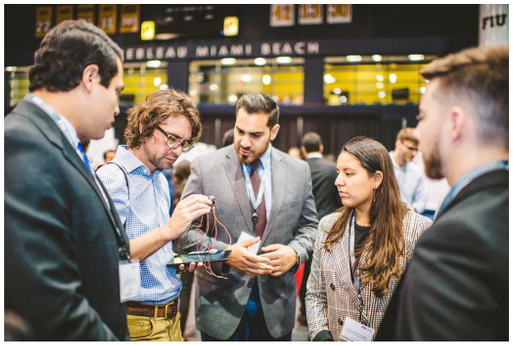
SPRING '19

Senior I
14 TEAMS

Senior II
30 TEAMS

BEST SENIOR PROJECT II - FALL 2018:
"Central Energy Plant Monitoring System"
Team: Facundo Morales, Lawrence Crisler, Bryan Gutierrez, Johnathan Ricknauth.
Project Advisor: Dr. Charlie Lin

BEST SENIOR PORJECT II - SPRING 2019:
"Portable Outdoor Air Conditioning Unit"
Team: Coradin, Alvaro Jose; Gutierrez Duran, Gabriela; Rojas Sanchez, Jose Fernando; Garcia, Steven Andrew.
Project Advisor: Dr. Abrahao - Dr. Muller-Karger



Florida-Wide Student Engineering Design event on Monday April 22nd, 2019 at Florida Atlantic University-Boca Raton Campus.
"Lab on a Chip- 3 D printed thrombosis on a Chip"
Team: Garcia, Deivid A.; Garcia Serna, Daniel; Miranda, Daniel Nicholas; Perez, Ruben Daniel.
Project Advisor: Dr. Norman Munroe

eMerge Americas on April 30th, 2019, 10:30 AM –12:30 PM at Miami Beach Convention.
Project SWEET: Transporting and Cleaning Water in Impoverished Rural Communities
Students: Bowyer, Andrew; Fiallo, Maria; Gomes, Randy; Pajon, Mauricio; Soto, Christopher
Mentor: Dr. Al exandra Strong, **Advisor:** Mr. Bob Hacker

MME TEACHING LABORATORY UPGRADE

Several tools and pieces of equipment were purchased for the Mechanical and Materials Engineering teaching laboratories. The new tools are available in the Mechanics and Materials Science Laboratory, the Manufacturing Process Laboratory and the Thermo-fluids Laboratory. The new tools provide students in the MME department with unique learning and hands-on experiences.

MECHANICS AND MATERIALS SCIENCE LABORATORY

Pendulum Impact Tester
- For the study of notched bar (Charpy) impact testing of different materials.
- To determine the impact strength of a material under applied force.

Euler's Buckling of Struts
- To demonstrate Euler's Buckling theory.
- Determination of critical or buckling load and stress for a material of various lengths.

Torsion Tester
- To find relationship between specimen length, torque, and angular deflection of different materials.
- Determination of shear modulus of rigidity of circular rods of different materials.

Strain Gauge Trainer
- Stress and strain relationship using strain gauges for three different systems:
- Tension, Bending, and Torsion Systems

THERMO-FLUIDS LABORATORY

Unsteady State Heat Transfer
- To study the transient temperature changes with sudden immersion of samples inside hot water.
- To understand how various shapes and materials with different conductivity affects heat transfer.

MANUFACTURING PROCESS LABORATORY

Tormach CNC Milling Machine
- To mill, drill, and bore on multiple materials.
- To make holes, contours, bosses, and cavities on materials.

Haas Lathe CNC Turning Machine
- To produce circular featured parts in multiple materials.
- To create OD and ID diameters, grooves, shoulders, holes, tapers, threads, and bores on materials.

Miller Multimatic 220 AC/DC Multiprocess Welder
- For various welding processes such as. TIG, MIG, flux cored, and stick.

For more information or questions please contact Dr. Meer Safa
msafa@fiu.edu
305-348-1806

MME e-LEARNING NEW CAPABILITIES

COURSE CAPTURE CLASSROOM

The MME department has upgraded room EC 3327 to a standard course capture classroom with video conference capabilities. The new course capture classroom is equipped with the state-of-the-art Sonic Foundry Mediasite RL120 Lecture Capture technologies with high quality video capture as well as remote and schedule-based recording. Additionally, the classroom features several demonstration and presentation capabilities including a Crestron Digital Media Presentation System (DMPS3-300-C) that integrates numerous sources such as projectors, flat panel displays, touch screens and other devices. The classroom is also equipped with a Panasonic 1 chip DLP laser projector, an 82-inch LED Display, and a WolfVision entry level VZ-3 Visualizer system that delivers high quality imaging and provides great flexibility for presentations. The course capture classroom also features the latest audio technologies including a multichannel Biamp TesiraFORTE CI Digital Audio Processor with Sona™ Acoustic Echo Cancellation (AEC) technology.

The course capture classroom introduces a new dimension to the e-Learning experience and is intended to greatly improve the learning experience by allowing instructors to focus on teaching while boosting student engagement and retention.

SENIOR DESIGN SPACE

The MME department is introducing a new space, Senior Design Space, to provide Mechanical and Materials Engineering students with a dedicated facility to work on their capstone projects, encourage group work and improve student success. This space is configured to provide students with work tools to complete their projects successfully. It features a simulation center with multiple workstations to run simulations and be used for design work. The space also features a fully interactive LED whiteboard to be used for meeting with external project advisors, presentations to stakeholders and general group work. There are also eight movable workbenches and tables available for students to use for mechanical work.

This design space is intended to:

- Create a versatile room dedicated to senior design student projects
- Improve the student experience and design
- Ease the transition to industry for the students to industry by providing them with the proper tools needed to complete their projects to industry standards

Building alliances between MME and the National Industry Advisory Board

The Department of MME hosted the National Industry Advisory Board (NIAB) as part of the goal to expand the visibility of the department at the university, state, and national level. The board consists of seven highly reputable industry partners including Boeing, Stryker, Plasma Processes, Neptune Research, Curtiss-Wright, Clarkson Aerospace, and A&A Coatings, which are a valuable resource for the department as they provide program development insights and industry perspectives. Thanks to our industrial advisory board for the great assistance in the evaluation of senior design projects and the feedback for ABET. Every semester, several senior design teams are able to get excellent feedback from their performance and projects, which allows them to improve and create better and more efficient solutions.

NIAB Members:

- David Axel Virzi: Program Manager at the Boeing Company
- Mr. Sumil Musali: Process Engineer at Curtiss Wright
- Christopher Lazzara: President of Neptune Research Inc
- Timothy N. McKechnie: President of Plasma Processes LLC
- Shawn M. Kroll: Vice President of Robotics Development at Stryker
- Mr. Riken Patel: Vice President of Engineering and Quality at A&A Coatings
- Dr. Baburaj Eranezhuth: Director of Materials Research at Clarkson Aerospace

Thanks to members of our industrial advisory board for their great assistance in the evaluation of senior design projects and their feedback for ABET. Every semester, several senior design teams get excellent feedback from their performance and projects, which allows them to improve and create better, more efficient solutions.

INTERNSHIP PROGRAM

The MME internship program, in collaboration with several industries, allows students to participate in professional training experiences. Students from the MME department are encouraged to participate in paid 3-to-6 month internship trainings which greatly enhance their hands-on and professional work experience

60+

Internship experiences since Fall 2018

40+

Employers/sponsors since Fall 2018

BOEING
ABB
FPL
GE APPLIANCES
NASA
Collins Aerospace
Propulsion Technologies International
A Safran Aircraft Engines & GE Aviation Joint Company
Honeywell
Medtronic
Ford
Los Alamos NATIONAL LABORATORY EST. 1943
smiths interconnect bringing technology to life
PERKO
FCA FIAT CHRYSLER AUTOMOBILES
VOSSEN
FDOT
Bell Helicopter A Textron Company
TITAN
UNITED
AEROJET ROCKETDYNE
Boston Scientific
BIOMERICS ADVANCED CATHETER

FACULTY EXPERTISE

Arvind Agarwal, PhD
Professor
CNT Reinforced Composites and Coatings, Plasma Spray, Surface Engineering, Nanomechanics and Nanotribology, Bioceramic Coatings, Spark Plasma Sintering

Yiding Cao, PhD
Professor
Heat Transfer, Heat Pipes Gas Turbine Cooling, Internal Combustion Engines, New Air Conditioners, Concentrating Solar Power, Solar Receivers

Jiuhua Chen, PhD
Professor
Crystallography, Mineral Physics, High pressure and temperature materials processing, advanced materials characterization

George Dulikravich, PhD
Professor
Multi-disciplinary computational analysis, inverse problems and design optimization, Biomedical engineering, Alloys design, Electro-magneto-fluid-dynamics

Ali Ebadian, PhD
Professor
Thermodynamics, Heat Transfer, Energy Systems

Cesar Levy, PhD
Professor
Fracture mechanics, Lifetime prediction of cracked autofrettaged thick-walled cylinders, Fitness-for-service prediction for multicracked systems, VEM abated vibrations, sensing properties of MWCNT composites

Norman Munroe, PhD
Professor
Biocompatibility of biomaterials Corrosion of Nitinol and bioresorbable alloys, Fuel Cells, Renewable Energy systems, Deepwater Oil & Gas, Climate Change, Greenhouse Gas Accounting

Ibrahim Tansel, PhD
Professor
Structural Health Monitoring (SHM), Additive Manufacturing (AM), System Identification, Automation of Manufacturing, Soft Robotics, Tracing of Magnetic Objects, Non Destructive Evaluation (NDE)

Chunlei Wang, PhD
Professor
C-MEMS based micro-biofuel cells, C-MEMS based bio-sensing, Micro super capacitors, materials for energy storage, Nanomaterials

Benjamin Boesl, PhD
Associate Professor
Solid mechanics, fracture mechanics, in situ mechanical testing, high strain rate/ dynamic material response, processing- structure-property relationship

Zhe Cheng, PhD
Associate Professor
Novel materials for solid-state fuel cells, Ultra high temperature ceramics, photovoltaic solar cells, In-situ spectroscopy characterization

Cheng-Xian Lin, PhD
Associate Professor
Heat and Mass Transfer, Computational Fluid Dynamics, Thermal Management, Energy Simulation, Buildings, Data Centers, Electronic Cooling

Dwayne McDaniel, PhD
Associate Professor
Robotics with applications to infrastructure inspection, autonomous systems, sensor systems, nondestructive evaluation, multi-body dynamics and structural mechanics

Daniela Radu, PhD
Associate Professor
Nanomaterials for solar photovoltaics, Advanced functional materials, Sensor design for heavy metals detection

Darryl Dickerson, PhD
Assistant Professor
Bioinspired materials, biological interfaces, orthopedic tissue biomechanics, tissue engineering

David Kelly, PhD
Assistant Professor
Computational Fluid Dynamics (CFD) for Coastal Engineering, Fluid Structure Interaction (FSI), Floating Bodies, Flow around Ships, Sediment Transport, Storm Surge Modeling

Pezhman Mardanpour, PhD
Assistant Professor
Constructal law, Design with constructal theories, Physics of design, Evolution, Nature, Aeroelasticity, Origami structures

Wei-Yu Bao, PhD
Instructor
Data Acquisition, System Identification, Automatic Control, Modeling and Simulation, Computer Aided Design, Computer Aided Manufacturing

Seyad Beladi, PhD
Senior Instructor
Internal Combustion Engines Combustion, Thermodynamics, Finite Element, Modeling

Kevin Boutsen, PhD
Instructor
Internal Combustion Engines, Vehicle Dynamics, Thermodynamics, Exhaust Flow, Motorsport Engineering

Carmen Muller, PhD
Instructor
Simulation on Mechanical Engineering, vibrations, Finite Element Analysis, Biomechanics, musculoskeletal system, Motion Analysis, Design of Mechanical Medical Devices

Ju Sun, PhD
University Instructor
Ultrafast laser-based techniques for materials processing, micro fabricating, measuring, and nonlinear imaging of biomedical and microscale engineering systems

Andres Tremante, PhD
Senior Instructor
Computational Fluid Mechanics & Heat Transfer Hydro & Thermal Turbo- machines, Energy Conversion & Transportation, Automotive & Aerospace Engineering

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FIU Engineering & Computing

Mechanical and Materials Engineering

Mechanical and Materials Engineering

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