ME-EM DEPARTMENT

TECHNICAL AREAS - SPRING 2019

DESIGN/DYNAMICS SYSTEMS(DDS)	ENERGY THERMO-FLUIDS(ETF)	MANUFACTURING INDUSTRIAL(MI)	SOLID MECHANICS(SM)
Area Director	Area Director	Area Director	Area Director
Blough J.R.	Miers S.	Endres W.J.	Miskioglu I.
Faculty	Faculty	Faculty	Faculty
Barnard A.	Allen J.	Endres W.J.	Abadi P.
Blough J.R.	Bar-Ziv E.	Friedrich C.R.	Ghosh S.
Chen B.	Bigham S.	Tewari R.	DeClerck J.
Gauchia L.	Cai C.	Wang Z.	Hadden C.
Ma S.	Choi C.K.		Miskioglu I.
Long F.	Johnson J.E.		Morse S.
Parker G.G.	King L.B.		Odegard G.M.
Robinette D.	Komaravolu VCR		Predebon W.W.
Sun S.	Lee S.Y.		Sain T.
Trinklein E.	Masoud H.		VanSusante P.L.
	Miers S.		
	Naber J.		
	Narain A.		
	Narendranath A.		
	Ponta F.L		
	Ra Y.		
	Shahbakthi M.		
	Tajiri K.		
	Yang S-L.		
	Worm J.J.		

LECTURERS/PROFESSORS OF PRACTICE

DeClerck, Jim-SM Johnson, Jaclyn-ETF Hadden, Cam-SM Narendranath, Aneet- ETF	Rao, KVC-ETF Tewari, Radheshyam-MI Van Susante, Paul-SM Bar-Ziv,Ezra-ETF

RESEARCH FACULTY

Anderson, Carl L-ETF Ghosh, Susanta-SM Goldsmith, Steven-DDS	Johnson, John H-ETF Medici,Ezequiel-ETF Jayaraman,Gopal-SM

RESEARCH ENGINEERS

Morgan,Chris-ETF Worm,Jeremy-ETF	Trinklein,Ed-DDS

PART TIME FACULTY & INSTRUCTORES

Ghosh, Susanta-SM Goldsmith, Steven-DDS Long,Fei-DDS	Medici,Ezequiel-ETF Morgan,Chris-ETF Trinklein,Ed-DDS Worm,Jeremy-ETF

Department of Mechanical Engineering and Engineering Mechanics		
DESIGN/DYNAMICS SYSTEMS(DDS)		**February 2019**
Students seeking details advice on technical electives, graduate school or career opportunities in specific disciplines are encouraged to talk to appropriate faculty listed below		
Faculty	**Technical Electives Taught**	**Expertise**
A. Barnard Room No.930, 7-2412 arbarnar@mtu.edu	MEEM4704, MEEM5900, MEEM4701, MEEM5702, MEEM5703	Signal Processing, Model Analysis, Acoustics. Noise control, vibrations
J.E. Barnard jebeard@mtu.edu	MEEM 4295, MEEM4404, MEEM4450/5450	Design and kinematics, biomedical, hybrid vehicle design
J.R. Blough Room No.1020A, 7-1020 jrblough@mtu.edu	MEEM4701, MEEM5700, MEEM5703	Digital Signal Processing, Rotating Machinery, Vibrations, Noise Control
B. Chen Room No.905, 7-3537 bochen@mtu.edu	MEEM4990/5990, MEEM4700, MEEM/EE4750, MEEM/EE 5750	Mechatronics and embedded systems, control systems, hybrid electrical vehicle, smart grid
F. Long Room No.912, 7-2546 flong@mtu.edu		
L. Gauchia Room No. EERC 612, 7-3382 gauchia@mtu.edu	MEEM5990, EE4222	Energy Storage System: Batteries, ultra capacitors, Fuel Cell, Vehicle and grid applications
S. Ma Room No.825, 7-3393 stevenma@mtu.edu		
G.G. Parker Room No.803, 370-1341 ggparker@mtu.edu	MEEM4705, MEEM5701, MEEM5715, MEEM6702	Control System, Dynamics, Robotics
R. Robinett rdrobine@mtu.edu		
D. Robinette Room No.933, 7-2764 dlrobine@mtu.edu		Powertrain system Dynamics and Controls, Signal Processing, Rotating Machinery, Torsional Vibration
S. Sun Room No.926, 7-2249 yes@mtu.edu	MEEM57115, Human Factors	Dynamic Systems, Controls, Sensors and Measurements
E. Trinklein Room No.307, 7-1741 ehtrinkl@mtu.edu		Controls, Robotics, Dynamic Simulations, Mechatronics micro grids
C.D. Van Karsen cdvankar@mtu.edu	MEEM4701, MEEM5700, MEEM5703	Model Analysis, Experimental Vibrations, Signal Processing

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ENERGY THERMO-FLUIDS(ETF) **February 2019**

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Faculty	Technical Electives Taught	Expertise
J. Allen Room No.810, 7-2349 jastallen@mtu.edu	MEEM4200, MEEM5290, MEEM5999, MEEM6999	Capillary Flow, Interfacial transport Phenomena, Fuel Cell, Phase Change Heat Transfer, Microgravity Fluid Physics, Near-field, Optical diagnostics, Porous Media
E. Bar-Ziv Room No.1012, 7-3151 ebarziv@mtu.edu	MEEM4240	Clean Coal Combustion, Biomass Torre faction, Thermal treatment of carbonaceous material for clean energy
K. Bellur Room No.129, 7-2513 ksbellur@mtu.edu		
S. Bigham Room No.1022, 7-2747 sbigham@mtu.edu	MEEM5280	Phase Change Heat Transfer, Transport Phenomena, Multiphase flows, Thermal management, Energy Systems, Micro and Nano fabrication techniques, micro and Nano engineered materials
C. Cai Room No.1013, 7-3286 ccai@mtu.edu	MEEM5210, MEEM5240	Computational Fluid dynamics, fluid dynamics, non-equilibrium and rarefied gas flows, plasma flow simulations, gas kinetic theory
C.K. Choi Room No.832, 7-1463 cchoi@mtu.edu		Micro-fluidics, cellular sensing, micro and Nano fabrication, micron and sub-micron optical visualization, microscale heat and mass transfer
J.E. Johnson Room No.817, 7-3433 jenesbit@mtu.edu	MEEM 5990 (IC Engines 1 - MEEM 4220)	Sprays and Combustion, Thermodynamics, Optical Diagnostics, IC Engines, Alternative Fuels
L.B. King Room No.1014, 7-2683 lbking@mtu.edu	MEEM5210, MEEM5990 (Plasma Dynamics)	Fluid Mechanics, Plasma physics, Space System Design, Space Simulations, Laser diagnostics, Space Propulsion
Komaravolu VCR Room No.829, 7-1173 kvcrao@mtu.edu	MEEM4403, MEEM4250	PACE Coordinator, Heat Transfer in rotating machinery, thermo-fluids, CAD, Design
S.Y. Lee Room No.927, 7-2559 sylee@mtu.edu	MEEM5270	Thermodynamics, Sprays and Combustion, Chemical Kinetics, Air-breathing Propulsion, Laser diagnostics, CFD combustion models
H. Masoud Room No.802, 7-3025 hmasoud@mtu.edu	MEEM5230, MEEM5210	Fluid Mechanics, Heat Transfer, Thermodynamics, method of applied mathematics, numerical modeling
S. Miers Room No.904, 7-2904 samiers@mtu.edu	MEEM4220, MEEM5200	Thermodynamics, Internal Combustion Engines, Alternative and Renewable transportation fuels, heat transfer, regulated and unregulated emissions, wireless telemetry
J. Naber Room No.1012, 7-1938 jnaber@mtu.edu	MEEM4220, MEEM5250, MEEM4295/5295, MEEM4296/5296	Sprays and Combustion, Internal Combustion Engines, After treatment, powertrain systems, hybrid vehicles
A. Narain Room No.804, 7-2555 narain@mtu.edu	MEEM5210, MEEM5230,MEEM5280	Integration of innovative condensers and boilers in advanced thermal and power systems, Computational Simulations, Fluid Mechanics, Heat Transfer, Condensing and boiling phase change floes, high-performance heat exchangers, sensors and flow charts

Faculty	Technical Electives Taught	Expertise
A. Narendranath Room No.917, 7-3019 dnaneet@mtu.edu	MEEM4210, MEEM5215	Mathematical modeling of thermal transport, evaporative phase change phenomenon, applied partial differential equations
F.L Ponta Room No.936, 7-3563 flponta@mtu.edu	MEEM4210, MEEM5215	Theoretical and computational fluid mechanics, vortex dynamics, fluid structure interaction, wind turbine aerodynamics, renewable energy sources, energy systems
Y. Ra Room No.907, 7-2385 yra@mtu.edu	MEEM4240, MEEM5270	Combustion Chemical Kinetics, Internal Combustion Engine, CFD, Spray Modeling, alternative fuels
M. Shahbakthi Room No.921, 7-3405 mahdish@mtu.edu		Modeling and control Energy systems, IC engines, hybrid electric powertrain, alternative fuels, combustion, building energy in smart grid
K. Tajiri Room No.932, 7-2675 ktajiri@mtu.edu	MEEM4230, MEEM4260	Transport phenomenon in multiscale/multiphase systems, Electrochemical energy conversion device(Fuel Cell), Two phase flows micro-channel
J.J. Worm Room No.709, 7-2686 jjworm@mtu.edu	MEEM4296, MEEM5296, MEEM5225	IC Engines, Alternative Fuels, Combustion, Engine development, Hybrid Vehicles
S-L. Yang Room No.903, 7-2624 slyang@mtu.edu	MEEM 5240	Computational Fluid dynamics, heat transfer, thermodynamics, Research and development

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MANUFACTURING INDUSTRIAL(MI)		**February 2019**
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Faculty	**Technical Electives Taught**	**Expertise**
W.J. Endres Room No.826, 7-2567 wjendres@mtu.edu	MEEM4610, MEEM5610, MEEM5990	Cutting Mechanics, Machining dynamics, Wood-Chipping Mechanics, mechanistic modeling techniques, mechanical design, entrepreneurship
C.R. Friedrich Room No.807, 7-1922 craig@mtu.edu	MEEM4640, MEEM5640	Micromachining, metrology, Nano-technology
R. Tewari Room No.818, 7-1743 rtewari@mtu.edu	MEEM4403, MEEM4650, MEEM5670, MEEM4430, MEEM4655, MEEM5650, MEEM4990, MEEM5990	Micromachining, metrology, Nano-technology
Z. Wang Room No.824, 7-2786 zequnw@mtu.edu	MEEM5401	Design Under Uncertainty, Prognostic and health management, modeling calibration and validation, reliability

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SOLID MECHANICS(SM)		**February 2019**
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Faculty	**Technical Electives Taught**	**Expertise**
P. Abadi Room No.923, 7-1735 pabadi@mtu.edu	MEEM4150, MEEM4180	Mechanical Behavior of materials, nanomaterials, biomaterials, materials and mechanics in tissue engineering
S. Ghosh Room No.827, 7-2689 susantag@mtu.edu	MEEM4150, MEEM4180, MEEM5170	Non-linear mechanics, Computational Mechanics, Mechanics of materials
J. DeClerck Room No.906, 7-2246 jdeclerck@mtu.edu	MEEM5702, MEEM5703	Analytical and experimental model analysis, Signal Processing, design process, model validation
C. Hadden Room No.822, 7-2913 cmhadden@mtu.edu		
I. Miskioglu Room No.821, 7-2752 imiski@mtu.edu	MEEM4150, MEEM5160, MEEM4170, MEEM5150, MEEM5180	Experimental Mechanics, Photo mechanics, Composite Materials, Nano mechanics
S. Morse Room No.201 Dillman, 7-3241 smmorse@mtu.edu		Numerical methods, Finite Elements, Mechanics of materials, Glass strength and fracture
G.M. Odegard Room No.805, 7-2329 gmodegar@mtu.edu	MEEM4150, MEEM4170, MEEM4405, MEEM4810, MEEM5110, MEEM5150, MEEM5160, MEEM5170, MEEM5180	Computational and experimental mechanics, material science, Nano mechanics
W.W. Predebon Room No.808, 7-2551/ 7-2158 wwpredeb@mtu.edu	MEEM5110, MEEM5710	Ceramics, Stress wave Propagation with microstructural effects, impact phenomena
T. Sain Room No.831, 7-2977 tsain@mtu.edu	MEEM4170	Computational mechanics, Finite element analysis, design of composite materials
P. Van Susante Room No.925, 7-3253 pjvansus@mtu.edu	MEEM4403, MEEM4405, MEEM4810	Finite Element analysis, Structures, design, mechanics of materials