Workshop 3:Mechanical Engineering							
Week 1	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan
Instructor	Prof. Emrah Celik	Prof. Emrah Celik	Prof. Emrah Celik	Prof. Emrah Celik			
Morning	•Introduction to Additive Manufacturing •Polymer Additive Manufacturing	•Polymer Composites Additive Manufacturing	•Ceramic Additive Manufacturing •Bioprinting	•Metal Additive Manufacturing	Cruise (Miami - Key West - Ocean Cay - Bahamas - Miami)		
Afternoon	Hands-on Lab (Fused Deposition Modeling Laboratory (FDM) •Custom Filament Making via Extrusion •3D Printing composite filaments with FDM	Hands-on Lab (Digital Light Processing (DLP)) • 3D Printing Photopolymers Using Carbon M1 Printer • DLP 3D Printing of Photopolymer Composites with Different Fillers	Hands-on Lab (Direct Ink Writing (DIW)) •Printing Fiber Reinforced Thermoset Composites •Flexural Mechanical Testing of Printed Composites	Hands-on Lab on Metal Additive Manufacturing •Powder Flow Analysis •Powder Imaging •Powder Bed Fusion Process			
Week 2	29-Jan	30-Jan	31-Jan	1-Feb	2-Feb	3-Feb	4-Feb
Instructor	Prof. Emrah Celik	Prof. Chunlei Wang/Xiangyang Zhou	Prof. Chunlei Wang/Xiangyang Zhou	Prof. Chunlei Wang/Xiangyang Zhou	Jan (Director of the admission office)		
Morning	•Additive Manufacturing of Thermoelectric Materials •Additive Manufacturing of Lithium-Ion Batteries	<ul> <li>Introduction of Clean Energy</li> <li>Electrochemical Energy Storage Devices</li> </ul>	•Fundamentals of Li-ion Batteries _Anode _Cathode _Electrolyte	Conventional Electrode Materials Fabrication Techniques •Fundamentals of Electrostatic Spray Deposition	How to apply for U.S graduate schools	Weekend Travel Tour	
Afternoon	Hands-on Lab on 3D Printing Batteries •DIW of Anode or Cathode Components of Li-Ion Battery •Electrical Characterization of Printed Battery Components	Hands-on Lab •introduction of Battery Testers •Assemble/Disassemble Commercial Batteries	Hands-on Lab • Preparation of Thin Film Electrodes by Casting ¬_Anode _Cathode •Assembly of Coin Cell Batteries	Hands-on Lab •Electrostatic Spray Deposition (ESD) _Preparation of Precursor Solutions _Deposition of Porous Electrode Materials by ESD	Campus visit		
Week 3	5-Feb	6-Feb	7-Feb	8-Feb	9-Feb	10-Feb	11-Feb
Instructor	Prof. Chunlei Wang/Xiangyang Zhou						
Morning	•Introduction of Analytical Methods (SEM, TEM, FTIR, XRD)	Guest Speaker	Group Presentation	Student Departure			-
Afternoon	Hands-on Lab •Materials Characterization: •Lab tour: SEM, TEM, FTIR, XRD	Guest Speaker	Farewell party				