



High-Speed Imaging for Motion Analysis: Systems and Techniques

Monday

SESSION

9:00- 9:15	Welcome, Introduce the Staff, Edgerton Center Background
9:15- 9:30	Introduction to High-Speed Imaging
9:30- 10:00	Basic Lighting
10:00- 10:15	Scientific High-Speed Cameras
10:15- 10:30	Break
10:30- 10:45	On-Chip CMOS-based Image Storage
10:45- 11:00	Camera Speed, Shuttering, and Triggering
11:00- 11:15	High-Speed Imaging at the Edgerton Center
11:15- 11:45	MIT Researcher Using High-Speed Imaging TBD
11:45- 1:00	Lunch
1:00- 1:15	Present Team Assignments
1:15- 2:00	Lab Session 1 - Basic Lighting
2:00- 2:45	Lab Session 2 - Scientific High-Speed Cameras
2:45- 3:00	Break
3:00- 3:45	Lab Session 3 - Camera Speed, Shuttering and Triggering
3:45- 4:30	Lab Session 4 - On-Chip CMOS-based Image Storage
4:30-	Meet in Collaboration Teams

Tuesday

SESSION

9:00- 10:00	Motion Analysis I: Extracting Movement Data from Video
10:00- 10:15	High-Speed Imaging Workflow for TV and Entertainment
10:15- 11:00	Lenses I
11:00- 11:15	Break
11:15- 11:30	Magnification and Frame Rate
11:30- 12:00	Lessons in Lighting
12:00- 1:00	Lunch
1:00- 1:45	Lab Session 1 - Lessons in Lighting
1:45- 2:30	Lab Session 2 - Lenses I
2:30- 3:15	Lab Session 3 - Magnification and Frame Rate
3:15- 3:30	Break
3:30- 4:15	Lab Session 4 -Synchronizing Video, Data & Instrumentation
4:15- 5:00	Lab Session 5 - Motion Analysis
5:00-	Meet in Collaboration Teams

Wednesday

SESSION

9:00- 9:30	Motion Analysis II: Detection & Tracking
9:30- 10:00	Motion Analysis III: 3D and 6DOF
10:00- 10:15	Break
10:15- 10:30	High-Speed Infrared Imaging
10:30- 11:30	Lenses II
11:30- 12:00	Schlieren
12:00- 1:00	Lunch
1:00- 1:15	Laser Illumination

1:15- 2:00	Lab Session 1 - High-Speed Infrared Imaging
2:00- 2:45	Lab Session 2 - Detection, Tracking, 3D and 6DOF Motion Analysis
2:45- 3:30	Lab Session 3 - Schlieren
3:30- 3:45	Break
3:45- 4:30	Lab Session 4 - Lenses II
4:30- 5:15	Lab Session 5 - Laser Illumination
5:15-	Meet in Collaboration Teams

Thursday

SESSION

9:00- 9:30	Ultra High-Speed Framing Cameras
9:30- 10:00	Streak Cameras
10:00- 10:15	Data Collection and the Digital Sensor
10:15- 10:30	Break
10:30- 11:00	Special Cases of Lighting
11:00- 11:15	Airborne, Crash, and Aerospace
11:15- 11:45	MIT Researcher Using High-Speed Imaging TBD
11:45- 12:15	Strobes for High-Speed Imaging
12:15- 1:15	Lunch
1:15- 2:00	Lab Session 1 - Ultra High-Speed Framing Cameras
2:00- 2:45	Lab Session 2 - Airborne, Crash, and Aerospace
2:45- 3:30	Lab Session 3 - Data Collection and the Digital Sensor
3:30- 3:45	Break
3:45- 4:30	Lab Session 4 - Shot in the dark (strobes)
4:30- 6:00	Final student prep time for presentation
6:00- 9:00	Reception, Dinner, Presentations and Graduation

Rev 3 jwb #####

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