I-DREAM4D

Education for the Future of U.S. Defense

DoD Consortium for **I**nnovation **D**riving **R**esearch/**E**ducation for **A**dvanced **M**anufacturing for the **D**efense

Course Title: DMEI 4316 **Additive Manufacturing Technologies for the Defense**
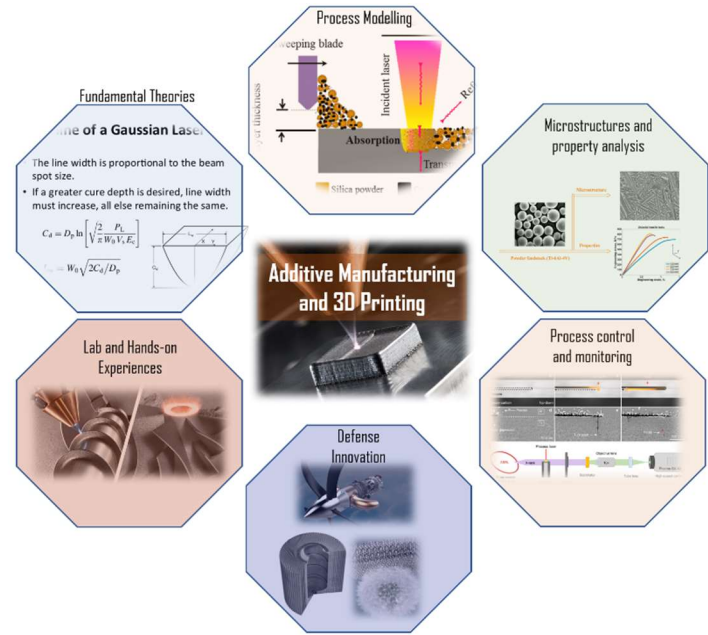
Instructor: Jianzhi (James) Li

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Graphic presentation your entire course:

Course Description:

Additive manufacturing (AM) is a process for producing three-dimensional solid objects directly from a digital model. AM is considered by global Manufacturers as the key technology that drives innovation. This course is designed to introduce from technical perspectives, the principle of AM process and 3D printing technologies, and their applications in defense manufacturing. We will also discuss advantages and disadvantages for each process and its best applications. We will spend effort on material properties and their effects to the final quality of fabricated products. We will then discuss innovations enabled by AM and 3D printing, especially in the defense sectors. The last part of the class is centered on the current development and future of AM. Guest lectures will be provided by Honeywell and Raytheon, where AM is supporting key innovation in their product design and manufacturing.

For more information about this course, Contact:
Dr. Jianzhi Li, jianzhi.li@utrgv.edu

For more information about the I-DREAM4D Education Program, Contact:
Dr. Douglas Timmer at Douglas.timmer@utrgv.edu

For Internship opportunity, visit:
https://idream4d.org/interns/

Topics covered:

- **Metal additive manufacturing processes**
- **Material laser interaction**
- **Monitoring and control in AM**
- **Design for AM**
- **Material/product Innovation in AM**
- **Guest lectures and case studies from industry and national labs**
- **Lab sessions**

To be offered in Spring 2021!

Upon accomplishing this course, students will be prepared for potential interns and jobs at companies such as:

Course offered by faculty members at: