



The Lightweighting certificate courses will be offered on a stand-alone basis and can be taken together as a package.

The three modules include:



Polymers



Additive  
Manufacturing



Advanced  
Materials

Participants will receive a stand-alone certificate for each module and an integrated fully branded LIFT CWRU NC3 professional certificate upon completion of all three modules.

## How To Register:

Registration is available at  
[www.case.edu/cps/courses/lift-program-overview/lift-courses/](http://www.case.edu/cps/courses/lift-program-overview/lift-courses/)

An integrated course module discount of 10% for the full certificate is available for individual participants in all three LIFT courses.

## CONTACT

Monica Dumitriu, MBA  
*Project Director, Professional Education*  
CWRU SLLP LIFT  
**Email:** mxd2@case.edu  
**Phone:** 216-368-3804

## FOR REGISTRATION INFORMATION, VISIT THE CWRU SLLP WEBSITE

<http://case.edu/cps/>



Manufacturing  
Extension Partnership



# Lightweighting Professional Certificate Program

**CASE WESTERN RESERVE  
UNIVERSITY SIEGAL LIFELONG  
LEARNING PROGRAM & LIFT**

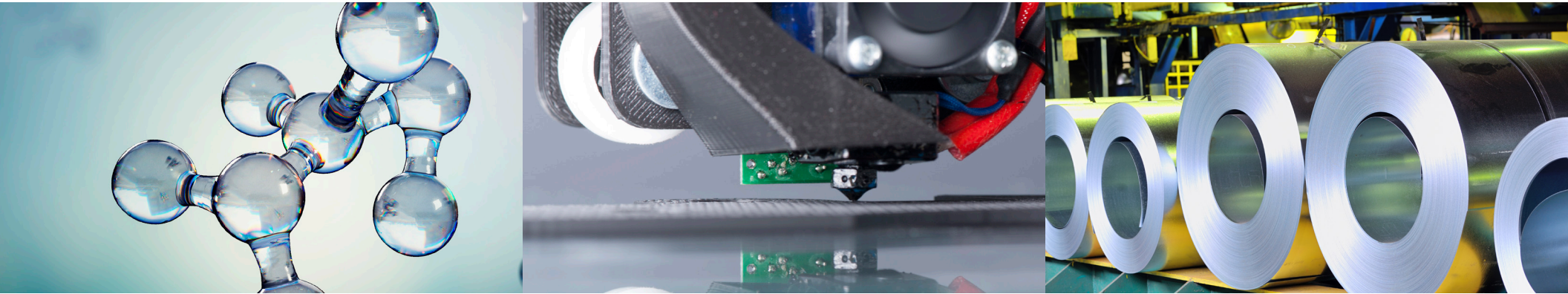


THE LAURA & ALVIN SIEGAL  
LIFELONG LEARNING  
PROGRAM



# Lightweighting Certificate Program Course Information

Advanced manufacturing around lightweighting is on the leading edge of industries around the country. With a lightweighting certificate, you'll be able to work in the most high-tech innovative fields - today!



## Polymers

### Learning Objectives:

- ▶ Learn practical uses of polymer characterizations, methods and structure-property relationships
- ▶ Understand polymer science, polymer synthesis to properties and polymer processing
- ▶ Demonstrate problem-solving skills in polymers through case studies analysis in multiple industries

### Lightweighting Related Jobs in Ohio:

- ▶ 8 consecutive years of employment growth
- ▶ Over 740,000 people employed across the state in 2017
- ▶ Over 7,600 online job postings in 2017

## Additive Manufacturing

### Learning Objectives:

- ▶ Learn where Additive Manufacturing (AM) technologies can be applied for design or economic advantage
- ▶ Understand lightweighting AM technologies, trends and applications in various industries
- ▶ Demonstrate problem-solving skills in lightweighting through case studies analysis with our AM experts
- ▶ Possible Job Titles Available in Lightweighting:
  - ▶ Designers
  - ▶ Product Engineers
  - ▶ Research & Development Engineers
  - ▶ Program Managers

## Advanced Materials

### Learning Objectives:

- ▶ Learn the fundamentals of materials science and how to improve properties such as strength, stiffness and ductility in a wide array of lightweight material options
- ▶ Understand the use of advanced materials databases (e.g., Granta) and the impact of key market drivers on the selection criteria for critical applications in the transportation industry
- ▶ Demonstrate the concepts introduced in this course through select case studies provided by resources across the country



### Contact us to learn more

  
[mxd2@case.edu](mailto:mxd2@case.edu)

  
216-368-3804

  
[case.edu/cps/](http://case.edu/cps/)