MEDICAL PLASTICS, CERTIFICATE

Requirements for an undergraduate certificate may be completed at any campus location offering the specified courses for the certificate.

Program Description

Plastics play a critical role in a growing medical industry. A significant portion of medical devices, prosthetics, implants, tools and packaging of devices and products are dependent on plastics. Many of products could not exist, or cost would be excessive, without plastics. Medical plastics is a subset of the larger plastics industry and represents a strong growth area. Medical plastics usage is expected to increase approximately 7% per year over at least the next five years. Medical plastics also represents a large opportunity for domestic plastics manufacturers as there is a general resistance to outsourcing this production due to concerns over the quality and safety of third-world suppliers.

What are Medical Plastics?

Plastic materials are lightweight, flexible, easily shaped, and can be kept sterile, making them a no-brainer element for creating implantable medical devices and prosthetics. The certificate in Medical Plastics explores issues related to plastics' use in medicine, including product design, materials choice, manufacturing options, and FDA regulations.

You Might Like This Program If...

- You are interested in the intersections of engineering and medicine.
- You'd like to help people with serious medical issues.
- You are majoring in Plastics Engineering Technology.

Program Requirements

To earn an undergraduate certificate in Medical Plastics, a minimum of 14 credits is required.

Code	Title	Credits
Required Courses		
BISC 4	Human Body: Form and Function	3
or MICRB 106	Elementary Microbiology	
PLET 380	Introduction to Plastic Medical Devices	1
PLET 481	Plastic Product Development	3
PLET 482	Medical Product Development	1
PLET 483	Plastics in Medical Applications	3
PLET 484	Medical Manufacturing Methods	3

Prerequisites Required.

Certificate Learning Objectives

- Students will, through application, demonstrate the ability to set up and qualify a manufacturing process for medical devices.
- Students will understand the requirements of polymers used in medical devices. This includes considering the needs of the product, manufacturing, and regulations.
- Students will demonstrate an understanding of the regulatory environment in which medical devices are designed, developed, and manufactured.

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/32-00-advising-policy/)

Erie

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Career Paths

The certificate in Medical Plastics is available to students majoring in the B.S. in Plastics Engineering Technology degree program. Penn State Behrend has a comprehensive support system to help you identify and achieve your goals for college and beyond. Meet with your academic adviser often and take advantage of the services offered by the Academic and Career Planning Center beginning in your first semester.

Careers

A certificate in Medical Plastics can open doors to careers with medical plastics manufacturers and medical device design firms, and in medical device sales.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES WITH A CERTIFICATE IN MEDICAL PLASTICS (https://behrend.psu.edu/school-of-engineering/academic-programs/certificate-programs/medical-plastics-certificate/)

Opportunities for Graduate Studies

Students who hold a degree in Plastics Engineering Technology pursue master's and doctoral degrees in plastics engineering, polymer science, materials science, and elastomeric materials. Those specialty fields can be further tailored to your career interest in medical device design and production.

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (https://behrend.psu.edu/school-of-engineering/academic-programs/certificate-programs/medical-plastics-certificate/)

Professional Resources

- ABET (https://www.abet.org/)
- Society of Plastics Engineers (https://www.4spe.org/i4a/pages/?pageID=3275)

- Institution of Engineering and Technology (https://www.theiet.org/)
- Society of Women Engineers (https://swe.org)

Contact

Erie

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