

ENGINEERING THERAPEUTICS MANUFACTURING - CERTIFICATE

Engineering Therapeutics Manufacturing Certificate is intended to meet the requirements of industry by educating engineering BS graduates to economically, ecologically and safely design and operate equipment used for the production and separation of biological materials. By the end of the certificate program, students will be able to:

1. Understand the processing of biological materials
2. Analyze functions and properties of biological materials
3. Understand the impact of the use/misuse of biological materials
4. Understand the life cycle and evolution of biological materials
5. Design, operate and optimize biological process units

For more information regarding the Engineering Therapeutics Manufacturing Certificate, please visit this website (<http://engineering.tamu.edu/academics/certificates/engineering-therapeutics-manufacturing/>).

Program Requirements

Code	Title	Semester Credit Hours
Required Courses		
Select one of the following:		3
BAEN 601	Advanced Agricultural Systems Analysis	
CHEN 651	Biochemical Engineering	
ISEN 645	Lean Engineering	
Prescribed Electives		
Select three of the following:		9
BAEN 631	Bioprocesses and Separations in Biotechnology	
BMEN 604	FDA Good Laboratory and Clinical Practices	
BMEN 686	Biomedical Nanotechnology	
BMEN 687	Drug Delivery	
CHEN 614	Advanced Transport Phenomena I	
CHEN 624	Chemical Engineering Kinetics and Reactor Design	
CHEN 629	Transport Phenomena	
CHEN 631	Process Dynamics and Advanced Process Control	
CHEN 651	Biochemical Engineering	
CHEN 655/ SENG 655	Process Safety Engineering	
CHEN 663	Systems Biology	
ISEN 613	Engineering Data Analysis	
Total Semester Credit Hours		12