

Module Description Manufacturing

Department	Business Administration and Engineering
Degree program	B.Sc. Business Administration and Engineering (Industry) - Production
Module name	Manufacturing
Module number	WI-1.442
Compulsory/ elective/ optional module	Compulsory
Module coordinator	Prof. Dr.-Ing. Ulrich Jacobs
Module content	Manufacturing Engineering Assembly Engineering
Learning objectives	Students develop the ability to design and operate complex manufacturing systems economically
Level/ category (Ba=1, Ma=2)	1
Which semester during the programme	4
Prior knowledge required	
Assessment (written/ oral test, paper, etc.)	Combined written test covering both submodules of 120 min
Usability of this module	B.Sc. Business Administration and Engineering (Industry) - Production
ECTS credits	6
Work load	Attendance hours: 6 SWS => 90 h 1 Excursion =>10 h Self-study: 80 h
Frequency of module offer	Annual
Module duration	1 semester
Course location	FH Jena
Course language(s)	German

Submodule Description Manufacturing Engineering

Department	Business Administration and Engineering
Degree program	B.Sc. Business Administration and Engineering (Industry) - Production
Submodule name	Manufacturing Engineering
Submodule number	WI-1.442.1
Main module	Manufacturing
Compulsory/ elective/ optional module	Compulsory
Module coordinator	Dipl.-Ing. Norbert Löhle
Module contents	<p>Production of flat modules (manufacturing printed boards, assembling PBs, test procedures)</p> <p>Production of optical components</p> <p>Coating processes (focus on PVD and CVD procedures)</p> <p>Microproduction processes (LIGA etc.)</p> <p>Polymer processing (principles of polymer materials, injection moulding, extrusion technology , polymer manufacturing processes)</p> <p>Supplementing the subject: principles of mechanical engineering whereby the course deals with mechanical engineering predominantly from a production and process point of view</p>
Learning objectives	The purpose is to provide an insight into methods and processes of selected products. The processes and products will be adapted to current conditions.
Course type (lecture, seminar, exercise, practical course)	1h S, 1h P
Recommended literature	<p>Weck, M.: Werkzeugmaschinen, Bd.1 – 5, 2005</p> <p>Scheel, W.: Baugruppenttechnologie der Elektronik-Montage, 2. Auflage, Saulgau, Berlin 1999</p> <p>Klein Wassink, RJ: „Weichlöten in der Elektronik“, 2. Auflage, Saulgau 1992</p> <p>Gailing, E.: Strategien zur wirtschaftlichen Produktion von elektronischen Baugruppen, Saulgau, 1999</p> <p>Michaeli: Einführung in die Kunststoffverarbeitung, 1999</p> <p>Koether/Rau: Fertigungstechnik für Wirtschaftsingenieure, 2005</p>
Learning materials	Script, demonstrators, overhead transparencies
Method(s) of instruction/ media being used	
Level/ category (Ba=1, Ma=2)	1
Which semester during the program	4
Prior knowledge required	
Assessment (written/ oral test, paper, etc.)	Written test of 60 min
Usability of this module	B.Sc. Business Administration and Engineering

	(Industry) – Production
ECTS credits	3
Work load	Attendance hours: 3 SWS => 45 h Self-study: 45 h
Frequency of module offer	Annual
Module duration	1 semester
Course location	FH Jena
Course language(s)	German

Sub Module Description Assembly Engineering

Department	Business Administration and Engineering
Degree program	B.Sc. Business Administration and Engineering (Industry) – Production
Submodule name	Assembly Engineering
Submodule number	WI-1.442.2
Main module	Manufacturing
Compulsory/ elective/ optional module	Compulsory
Module coordinator	Prof. Dr.-Ing. Ulrich Jacobs
Module contents	Essential principles of assembly operations, methods and operating equipment demonstrating the assembly process chain are presented.
Learning objectives	Students learn to assess and improve assembly tasks and to design assembly systems.
Course type (lecture, seminar, exercise, practical course)	1h S, 1h E
Recommended literature	<p>Lotter, B./Wiendahl, H.-P.: Montage in der industriellen Produktion – Ein Handbuch für die Praxis, Berlin 2006</p> <p>Bullinger, H.-J.(Hrsg.): Systematische Montageplanung -Handbuch für die Praxis, 1. Auflage, München/Wien 1986</p> <p>Hesse, St.: Handhabungsmaschinen – Grundlagen und Prinzipien in Aufbau, Funktion, Baugruppen, Programmierung und Steuerung, 1. Auflage, Würzburg 1993</p> <p>Hesse, St.: Montagemaschinen – Grundlagen und Prinzipien in Aufbau, Funktion, Antrieb und Steuerung montierender Maschinen, 1. Auflage, Würzburg 1993</p> <p>Wiendahl, H.-P./Gerst, D./Keunecke, L. (Hrsg.): Variantenbeherrschung in der Montage, Berlin/Heidelberg 2004</p> <p>Feldmann, K./Gergs, H.-J./Slama, St./Wirth, U. (Hrsg.): Montage strategisch ausrichten – Praxisbeispiele marktorientierter Prozesse und Strukturen, 1. Auflage, Berlin/Heidelberg/New York 2004</p> <p>Westkämper, E./Bullinger, H.-J./Horváth, P./Zahn, E. (Hrsg.): Montageplanung - effizient und marktgerecht, Berlin/Heidelberg 2001</p> <p>Boothroyd, G./Dewhurst, P./Knight, W.: Product design for manufacture and assembly, New York/Basel/Hong Kong 1994</p>
Learning materials	PowerPoint transparencies, script, video sequences, demonstrators
Method(s) of instruction/ media being used	Seminarian tuition, machine systems
Level/ category (Ba=1, Ma=2)	1
Which semester during the	4

program	
Prior knowledge required	
Assessment (written/ oral test, paper, etc.)	Written test of 60 min
Usability of this module	B.Sc. Business Administration and Engineering (Industry) - Production
ECTS credits	3
Work load	Attendance hours: 3 SWS => 45 h Self-study: 45 h
Frequency of module offer	Annual
Module duration	1 semester
Course location	FH Jena
Course language(s)	German