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| COURSE NUMBER: Vm020 | | COURSE TITLE: Machinshop Training (Engineering Practice Training) | |
| CREDIT: 1 | | PREREQUISITES: none | |
| TEXTBOOKS/REQUIRED MATERIAL: 傅水根, 李双寿. 机械制造实习[M]. 北京: 清华大学出版社, 2009. 鞠鲁粤. 机械制造基础(第5版)[M]. 上海: 上海交通大学出版社, 2009. 《数控车床》(讲义) 上海交通大学工程训练中心, 2001 《数控铣床》(讲义) 上海交通大学工程训练中心, 2001 《电蚀加工》(讲义) 上海交通大学工程训练中心, 2000 | | PREPARED BY: Mian Li DATE OF PREPARATION: Jan. 27, 2015 DATE OF UC APPROVAL: Feb. 16, 2015 | |
| INSTRUCTOR(S): Instructors/staff of SJTU Engineering Training Center | | SCIENCE/DESIGN: none | |
| CATALOG DESCRIPTION: This is an introductory course on the practice of manufacturing processes. In this course, students will gain hands-on skills in operating basic machine tools and equipment, as well as background knowledge on related manufacturing technologies, and familiarity with the complete process of product design, analysis, and fabrication. | | COURSE TOPICS: Session 1. Introduction (1 hour) Session 2. Lathe Machining (24 hours) Session 3. Milling Machining (8 hours) Session 4. Fitter (16 hours) Session 5. Numerical Control Lathe Machining (8 hours) Session 6. Numerical Control Milling Machining (8 hours) Session 7. Laser Machining (8 hours) | |
| COURSE STRUCTURE/SCHEDULE: Lab: 8 hours per weeks, 9 weeks | | | |
| COURSE OBJECTIVES [Course Outcomes in brackets] | 1. To provide the knowledge and experience necessary to design, manufacturing and assemble typical mechanical components; [1,2,3] 2. To provide the knowledge and training for students to improve their hands-on work experiments and skills; [1,2,3] 3. To provide the basic knowledge and training on operating mechanical instruments, safety regulations; [2,5] 4. To provide experiences working together as a team to accomplish a common goal. [4,5] | | |
| COURSE OUTCOMES [Program Outcomes in brackets] | After completing Vm020, students should be able to have: - an ability to apply knowledge in manufacturing techniques [a] - an ability to use manufacturing machines/equipment [k] - an ability to design a system, component, or manufacturing process to meet desired needs within realistic constraints such as health and safety, manufacturability, and sustainability [c] - an ability to function on multidisciplinary teams [d] - an understanding of professional and ethical responsibility - an ability to communicate effectively - an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice [k] - an ability to work professionally in both thermal and mechanical systems areas | | |
| ASSESSMENT TOOLS [Course Outcomes in brackets] | Final grades will be based on the evaluation during the course procedure, students' performance, which includes the scores of all the practical items, and attendance. | | |