

Definition of the Competence: Realize benchwork operations Title of module : BENCHWORKS Class : 1 st year Mechanical Engineering specialties (MARE, MAEL, MAIN, CAPA, MEFA, COOM, MEFE) Minimum weekly workload : 06H Minimum annual workload : 132 H			Pedagogic Recommendations
Elements of the competence	Contents of the competence	Assessment indicator	
Use bench work tools and equipment	Usage of control / measuring instruments • Steel ruler • Protractor (universal bevel protractor) • Vernier Caliper Usage of marking out tools and equipment • Scribbling block • Centre punch • Steel square • Protractor (universal bevel protractor) • Mallet • V block • Surface plate Usage of sawing tools • Hacksaw • Bench vice • V block Usage of filing tools • Smooth file • Bastard file • Round file	- Judicious choice of control /measuring instruments - Correct handling of instruments - Correct arrangement of instrument; - Respect of safety measures.	
Carry out marking out	Marking out the outlines of a piece • <i>Realization of a flat marking out with joining ;</i>	- Accuracy of dimensions and tracings; - Correct positioning of the piece on the surface plate ; - Respect of geometrical shapes;	

	• <i>Realization of an overhead marking out</i>	- Correct Construction of joining; - Correct arrangement of measuring /control instruments, marking out tools and cutting tools after used; - Cleaning of the working post ; - Respect of safety measures.	
Carry out cutting of mechanical pieces	Cutting of pieces • <i>Execution of manual sawing;</i> • <i>Execution of cutting with hand shears;</i> • <i>Execution of cutting with chisel</i>	- Correct setting of hacksaw blade on the frame; - Correct setting of the piece on the bench vice; - Respect of ergonomic attitudes; - Correct realization of the sawing; - Respect of the shape and the cutting plan; - Correct arrangement of cutting tools, marking out tools and control/measuring tools after operation; - Cleaning of the working post; - Respect of safety measures.	
Carry out filing and forming works	Realization of a piece by filing • Shape flat surfaces; • Shape parallel surfaces; • Shape perpendicular surfaces; • Shape inclined surfaces; • Shape simple convex surfaces; • Put in order the working post. Realization of pieces by forming and rolling • Realization of a bending on the bench vice • Realization of pieces by rolling	- Correct control of dimensions of the piece to be filed; - Correct setting of the piece on the bench vice; - Respect of ergonomic attitudes; - Respect of operating procedure; - Respect of dimensions, shape and surface texture; - Correct arrangement of cutting tools, tools and control /measuring instruments; - Cleaning of the working post; - Respect of safety measures.	