

Course Syllabi

1. INGE-00018 MACHINE TOOLS

2. 96 credits hours.

3. Bibliography

- Machine Tool Practices, Richard R. Kibbe, 2019
- Machining and Machine Tools, Davim, J.P., 2013
- All About Machine Tools, Gerling, H., 2012
- Control de movimiento en manufactura. Automatización CNC fundamentos de diseño y modelamiento experimental, Córdoba, E., Paternina, J., & García, J., 2013

4. Specific Course Information

- a. The subject Machines, Tools and accessories fosters in the student the knowledge of the various manufacturing processes through chip starters, the most used method in the industry for a) the manufacture of molds, which are basic elements for obtaining various products, b) the manufacture of parts and parts of equipment and machines in companies and c) the development of the spatial capacity of the student in the design of mechanical elements. is fundamental in machine tools, machining processes, machining time calculations and handling of this type of machines. This material contributes to the knowledge of methods of transformation of resources for the production of goods within the industrial environment and meets the exit profile of the race: "Recommends the best procedure for the optimization of a production system." It contributes to: RA1. Problem solvingIdentifies, formulates and solves complex problems of engineering to applying principles of engineering, science and mathematics RA2. DesignApply engineering design to produce solutions that meet specific needs taking into account public health, safety and well-being, as well as global, cultural, social, environmental and economic factors RA6. Experimentation.Develops and conducts appropriate experimentation, analyzes and interprets the data and uses engineering criteria to obtain conclusions.
- b. Prerequisites:
- INGE-00013 MACHINE DESIGN
 - INDU-00006 COMPUTER-AIDED INDUSTRIAL DESIGN

5. Learning Objectives of the Course

- a. To acquire knowledge about processes through chip
- starting, employed in the industry for the manufacture of molds used in industrial processes and/or parts of machines and equipment, as well as the skills required to operate and/or manage the operation of the most common machine tools (turn, drilling, milling and grinding).
 - To identify processes to be used for the manufacture of molds and parts (pieces) of equipment and machines and to develop work plans
 - Calculate machining times
 - Determine simple element production costs
 - Operate basic machine tools
 - Identify and/or prepare programs for CNC machine tools
- b. Learning Outcomes
- It relates the theory of the processes of mechanical elements elaboration with economic factors.
 - Interprets mechanical element design information and uses that information for the corresponding

manufacturing.

- Recommends and supervises proposals for the manufacture of machine elements and links these proposals with the need to maintain the operation of production processes in plants.
- Interprets design information for the manufacture of mechanical elements present in the industry

6. Course Topics

- Manufacturing of turned piece
- Manufacture of parts with perforations.
- Freshing of piece
- Heading no. of parts
- Mortajada and broached process
- Smerilate of piece
- Fishing of pieces
- Mechanized from wheels dented
- Numeric control in machines- tools