Course Syllabi

1. INDU-00020 PRODUCTION SIMULATION
2. 144 credits hours.
3. Bibliography

- TOCNUN. Manufacturing plant visual simulator and editor for learning Theory of Constraints, Javier Santos, Igor Gaztelu y Rodrigo Romero, 2008
- Variability Simulation , LEAN ACADEMY MIT, 2012
- MATERIAL DE APOYO, ARIAS JAMES, 2020
- ADMINISTRACIÓN DE OPERACIONES, CARRO PAZ, ROBERTO / GONZALEZ GOMEZ, DANIEL, 2012
- SOBRE HOMBROS DE GIGANTES, Eliyahu Goldratt, 2008

4. Specific Course Information

a. The subject of simulation of production through the use of digital technology allows students to understand in a systemic and holistic way the different production systems, and through the analysis, organization and evaluation of the variables that make up it, develop a critical thinking that allows them to learn to make decisions in the simulated environment. It covers the objectives of the numeral discharge profile: RA1. Problem solving. It identifies, formulates and solves complex problems d and engineering applying principles of engineering, science and mathematics RA2. Design. Applies 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 RA4. Ethics and responsibility. Recognizes ethical and professional responsibilities in engineering situations to make informed judgments that should consider the impact of ing solutions in global, economic, environmental and social contexts RA7. Self-learning. Acquires and applies new knowledge as required, using appropriate learning strategies

b. Prerequisites:
   - MAES-00086 EXPERIMENTAL DESIGN
   - EDCA-00232 STRATEGIC INFORMATION SYSTEMS

5. Learning Objectives of the Course

a. General objective: To learn the decision
   -making in the different production environments that allow to increase the productivity of the system.

   - To make decisions to correct the distortions in the production systems, through the use of simulators that allow the learning of actions of priority, capacity, flexibility and/or flow.
   - To manage different systems of production management.
   - To generate integrated production models.

b. Learning Outcomes
   - Ra4: apply different priority actions in production environments to solve problems
   - Ra2: applic flow actions in production environments to solution problems
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   - Ra1: apply mixed programming principles for different manufacturing environments
   - Ra4: apply different management actions of capacity and flexibility in production environments to solve problems

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- Ra7: manage production and administration policies according to manufacturing environment
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- Ra1: recreating a finite capacity manufacturing environment using the logic of complex thinking
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- Ra7: manage production and administration policies according to manufacturing environment
- Ra4: apply different management actions of capacity and flexibility in production environments to solve problems

6. Course Topics

- Enterprises genome
- Variability and dependence
- Withdrawal lines
- Continuous and logical priorities production
- Joint programming
- Final capacity
- Simulation of undertakings