

## Latin American University of Science and Technology

### OVERVIEW

Course name	Production and Operations Management
<b>Code</b>	07-0089
<b>Credits</b>	2.5 US Credits / 5 ECTS
<b>Modality</b>	Virtual with online sessions
<b>Nature</b>	Theoretical-practical
<b>Duration</b>	12 lessons spanning 6 Weeks (2 lessons per week, 3 hours per lesson)
<b>Schedule</b>	TBA
<b>Professor</b>	TBA

### PURPOSE OF THE COURSE

According to Stevenson (2018), operations management consists of the management of systems and processes that result in the creation of value through the provision of products and services.

In this sense, the administration of production operations is a great professional responsibility for any administrator, considering the provision of products or services demanded by consumers is the result of a complex planning process in which all activities and materials necessary for the preparation or delivery of the final product or service must comply with quality assurance and efficiency parameters.

Globalized economies and the development of international markets increasingly force companies to seek ways to be more efficient in their production processes without compromising quality. For this reason, it is essential for professionals in training to be updated with respect to the latest trends in operations management its challenges and current methodologies.

In the "*Production and Operations Management*" course students will analyze case studies, individually and in work teams, research different topics in this area, and apply the concepts seen to help improve the administration of supply chains and production processes to ensure competitiveness and the capacity of any organization to offer value through its provision of services and products.

## Course Competences

Disciplinary Competence:	The student will be able to:	The student shows the mastering of the competence in learning activities such as:
Make proposals for production processes and operations to optimize company resources, develop ventures and innovations.	Analyze the material, human and environmental factors that hinder efficiency in the production and delivery of goods and services to improve business management.	Participates in Forums and Collaborative Activities in which to demonstrate knowledge of the different methods and techniques to improve operations management in specific situations.  Carry out case studies to demonstrate the ability to solve problems that occur in the production and supply chain of companies in different contexts
General Competence:		
To show competence for learning and for looking for personal and professional effectiveness.	Creative thinking	Uses his/her creativity in applying administration problems faced in everyday situations.
	Communication.	Communicates verbally, non-verbally and in writing with his/her peers, professor and general public, in a variety of forms and contexts.
	Collaborate.	Collaborates and interacts with others with effectiveness and respect.
	Reason	Uses reasoning when synthesizing, establishing arguments, evaluating alternatives and establishing conclusions, when communicating with peers and professors.
	Use information technology and communication.	Uses information technology and communications to do research, to organize, evaluate and communicate information.
	Use scientific methods and tools.	Uses scientific methods when doing arriving to conclusions.
	Personal effectiveness	In the interaction with others in the learning activities of the course, the student must demonstrate responsibility, ethics, leadership, productivity; self-management and disposition for change.

## Course Content

Weeks and Lessons	Topics
<p><b>Week 1:</b> Operations management, competitiveness, strategy and productivity</p> <p><b>Lesson 1</b></p>	<ol style="list-style-type: none"> <li>1. Course Introduction</li> <li>2. Production of goods and services</li> <li>3. Operations management and decision making</li> </ol>
<p><b>Week 1:</b> Operations management, competitiveness, strategy and productivity</p> <p><b>Lesson 2</b></p>	<ol style="list-style-type: none"> <li>4. Mission and strategies</li> <li>5. operational strategy</li> <li>6. Turning strategy into action</li> <li>7. Productivity</li> </ol>
<p><b>Week 2:</b> Predictions</p> <p><b>Lesson 1</b></p>	<ol style="list-style-type: none"> <li>1. Common characteristics of all predictions</li> <li>2. Elements of a good prediction</li> <li>3. Relationship of production with the supply chain</li> <li>4. Reliability of predictions and error monitoring</li> <li>5. Methodologies for predictions</li> <li>6. Types and techniques of predictions</li> </ol>
<p><b>Week 2:</b> Design of products and services</p> <p><b>Lesson 2</b></p>	<ol style="list-style-type: none"> <li>1. Legal and ethical considerations</li> <li>2. Human and cultural factors</li> <li>3. Environmental factors: sustainability</li> </ol>
<p><b>Week 3:</b> Design of products and services</p> <p><b>Lesson 1</b></p>	<ol style="list-style-type: none"> <li>4. Process phases</li> <li>5. Design for production</li> <li>6. Strategic capacity for the design of products and services</li> </ol>
<p><b>Week 3:</b> Business design</p> <p><b>Lesson 2</b></p>	<ol style="list-style-type: none"> <li>1. Process selection and organizational design</li> <li>2. Work design and measurement</li> <li>3. Planning and analysis of the business location</li> </ol>
<p><b>Week 4:</b> Administration and quality control</p> <p><b>Lesson 1</b></p>	<ol style="list-style-type: none"> <li>1. Fundamentals of modern quality management</li> <li>2. Certifications and quality awards</li> <li>3. Inspection</li> <li>4. Statistical control of information</li> </ol>
<p><b>Week 4:</b> Instruments and techniques for planning</p> <p><b>Lesson 2</b></p>	<ol style="list-style-type: none"> <li>1. Production master plan</li> <li>2. Enterprise Resource Planning System</li> <li>3. Planning material requirements</li> <li>4. Inventory management</li> </ol>
<p><b>Week 5:</b> "Just in time" method and supply chain management</p> <p><b>Lesson 1</b></p>	<ol style="list-style-type: none"> <li>1. Manufacturing tools</li> <li>2. Operation strategies</li> <li>3. Trends in supply chain management</li> <li>4. Global supply chains</li> <li>5. Inventory management</li> <li>6. Create an effective supply chain</li> </ol>

<p><b>Week 5:</b> Programming of Operations and project management</p> <p><b>Lesson 2</b></p>	<ol style="list-style-type: none"> <li>1. Programming of operations</li> <li>2. Low volume system programming</li> <li>3. Service programming</li> <li>4. Life cycle of a project</li> <li>5. Behavioral aspects of project management</li> </ol>
<p><b>Week 6:</b> Programming of Operations and project management</p> <p><b>Lesson 1</b></p>	<ol style="list-style-type: none"> <li>6. Gantt charts for planning</li> <li>7. Budget Control</li> <li>8. Statistical predictions</li> <li>9. Risk management</li> </ol>
<p><b>Week 6:</b> Administration of waiting lines and linear programming</p> <p><b>Lesson 2</b></p>	<ol style="list-style-type: none"> <li>1. Reasons for the wait</li> <li>2. Characteristics and measurement of waiting lines</li> <li>3. Models for the management of complaints or claims</li> <li>4. The psychology of waiting</li> <li>5. Linear programming models</li> <li>6. Graphic linear programming</li> </ol>

## THE LEARNING ENVIRONMENT

### Teaching methodology

To make the course compatible with the needs, interests and learning styles of all students, we use the inverted classroom teaching methodology, or "flipped classroom". The assignments that require less cognitive effort (those of remembering and understanding) are undertaken by students outside the classroom, and those that require more cognitive effort, such as application, analysis, synthesis and evaluation, are conducted within the classroom.

The course provides materials, such as readings, videos, narrated presentations and others, via the online learning management system used by ULACIT (Blackboard). Students should prepare their participation in the classroom, studying the theory at home. The face-to-face (online) sessions are reserved for practice, reflection and discussion. They revolve around questions, controversies and real-life issues. With this active, reflective and participatory methodology, students are expected to develop the general competencies that this course proposes. In addition, they are expected to develop a deep understanding of the subject, participating in the shared construction of knowledge with other students, teachers and other members of society.

### Bibliography

- **Required Texts**
  - Stevenson, W.J. (2018). Operations management. (13a Ed.). Estados Unidos: McGraw Hill.
  - Chase, R.B; Jacobs, F.R. y Aquilano, N.J. (2014). Administración de Operaciones: Producción y Cadena de Suministros. (13 Ed.). México: Mc-Garw Hill.
- **Complementary Readings**
  - Collier, D.A. y Evans, J.R. (2016). Administración de Operaciones. (5 Ed.). México: Cengage Learning Editores.
  - Munson, C. (2013). The Supply Chain Management Casebook: Comprehensive Coverage and Best Practices in SCM. New Jersey; U.S. : FT Press.
  - Oakland, J.S. (2014). Total Quality Management and operational excellence: text with cases. (4a Ed.). Hampsphire, Inglaterra: Routledge.
  - Slack, N. & Lewis, M. (2017). Operations Strategy. (5a ed.). Great Britain: Pearson

## EVALUATION METHODOLOGY

The qualification of the course is distributed in the following evaluative activities:

Activity	Percentage
<i>Virtual forums (4)</i>	40%
<i>Summaries of Discussion Topics (5)</i>	25%
<i>Group Project</i>	20%
<i>Class Participation</i>	15%
<b>Total</b>	<b>100%</b>

### **Virtual Forums: 40%**

It is necessary that students do the readings assigned and demonstrate they understand the topics and concepts through class and online participation in virtual forums. Therefore, each student will participate in 4 virtual forums, each carrying a 10% grade.

#### **Rubric to Evaluate the Virtual Forums**

Virtual forums					
	1	2	3	4	5
Demonstration of an understanding of the topic of discussion through critical thinking, higher-order thinking, and uniqueness of contribution					
Community building through collaboration and connection with other students (minimum 2 replies)					
Proper netiquette and mechanics of writing					
Timeliness and participation with posts/replies					
<b>Total</b>					

### **Summaries of Discussion Topics: 25%**

The professor will establish discussion topics based on the reading(s) assigned, students will discuss and summarize the main concepts and issues related to each topic, and respond to a series of questions provided by the professor. The expectation is that the students will collectively and cooperatively apply the knowledge and findings they have individually attained through the course readings and study efforts before class.

#### **Rubric to Evaluate Summaries**

Criteria / Group Activity	0	1	2
1. The group response or activity product is <b>formulated clearly and responds to the appointed activity.</b>			
2. The group response or activity product <b>employs a correct use of grammar and spelling.</b>			
3. The group response or activity product is presented <b>as requested and in a structured, organized and clear manner.</b>			
4. The group response or activity product is <b>adequately supported by academic and documentary resources.</b>			
5. The group response or activity product <b>presents conclusions and arguments clearly and logically, the ideas presented derive from the studied readings, concepts and discussions. They are relevant to the course subject and the established activity.</b>			
<b>TOTAL</b>			
<b>Note: 0: does not comply, 1: incomplete, 2: complies</b>			

## Group Project: Case Studies 20%

The professor will randomly organize students in work groups and provide each group with a study case to be analyzed. All members of the team will participate to develop the case study and present the case to the class. In order to get full credit for the Case, the student must be present.

Item	100%	50%	0%
<b>Findings and Discussion</b>	The team presented the problems faced by the Organization in a structured and clear manner, using the proper concepts and applying them accordingly.	The team clearly presented the problems faced by the Organization, but didn't thoroughly apply the concepts and applying them proper accordingly.	The team did a poor job presenting the problem of the Organization.
<b>Introduction and Background</b>	The team clearly presented the background of the company.	The team presented the background of the company, but the information was not clear.	The team did not present the background of the company.
<b>Conclusions, Recommendations and Bibliography</b>	The team presented at least three <u>specific</u> conclusions and recommendations.	The team presented recommendations, but they were extremely generic and lacked depth.	The team did not present any recommendations for the organization.
<b>Presentation Skills and Communication</b>	All team members have excellent presentation skills: good voice projection, good posture, good command of the stage. The presenter did not have to read the slides.	Only one of the team members has excellent presentation skills: The presenter read the slides sometimes.	None of the team members have proper presentation skills: bad voice projection, bad posture, bad command of the stage. The presenters read the slides most of the time.

## Class Participation - 15%

Participation means that students must actively engage in all of the class activities and class discussions. **Just being present in the lesson is not considered participation. The student actively participated, significantly enhancing the learning experience for other classmates. The student read the assigned reading and actively listened to his/her peers and commented on relevant class discussions and their peers' opinions.** Attendance is mandatory. Failing to attend the class more than 3 times will automatically fail you. You must always let the professor know in advance if you are not going to make it to class; however, excusing yourself will not eliminate the attendance requirement. The only justified absences are justified health issues, mandated by a doctor with due evidence or a publicly known force majeure event, and evidence of how it affected a student's attendance. Leaving the class early is not as attendance. For virtual lessons it is mandatory for students to log in individually, they cannot share a computer with other students, and will need to have the camera on at all times.

## **INSTITUTIONAL POLICIES**

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### **Attendance**

ULACIT's commitment is to ensure that its students successfully complete their curriculum. Active participation is a key factor in the use of learning processes, so attendance at on-site courses is mandatory. If a student absents himself unjustifiably to three or more lessons, he automatically fails the course (Student Regime Regulations, chapter IX). The justification of absences only comes for health or work reasons, based on official documents. The justification is processed directly before the teacher, who has discretionary powers to accept or not the justification. Irrespective of the nature of the absence, the evaluation activities carried out on the day of the absence are not replenished.

### **Academic honesty policies**

ULACIT promotes the high ideals and rigorous standards of academic life. For purposes of this course, participants are expected to avoid dishonest behaviors such as fraud or plagiarism. Making fraud includes inventing data, falsifying bibliography, using projects drawn up by other people, obtaining unauthorized help on qualified assignments or having someone else do the work that is your job. Plagiarism includes verbatim copying of sentences, sentences, paragraphs and whole pieces of printed material, Internet and other sources, without making the corresponding appointment; or to paraphrase without citing the sources. The cases of fraud or plagiarism will imply the automatic loss of the course, and if the fault is repeated, they will be sanctioned with the definitive expulsion. The institution through its Blackboard platform has the "safe assign" tool that allows us to check the source used by students in the papers presented with other academic documents, identifying a match between them. This option can be used to prevent plagiarism and create opportunities to encourage students to respect copyright within the classroom, and the importance of avoiding plagiarism of information.

### **Level of integration of English**

ULACIT is a bilingual university. Therefore, in the courses that are taught English courses, didactic resources are used in Spanish and English, depending on the location of the course in the curriculum. In courses marked with the word "English" in the academic offer, students can submit their projects and other assignments in English. Courses in bilingual careers are taught entirely in English. In undergraduate and postgraduate careers, it is requested to read compulsory bibliography exclusively in English, although all courses may incorporate complementary readings in Spanish.

### **Creating a culture of respect**

In ULACIT, we establish high expectations of behavior of the members of the university community. Therefore, we emphasize the value of mutual respect and we expect everyone to treat others the way they want to be treated. We define respect as the consideration and appreciation that we can show others without respecting people, so we do not tolerate disruptive actions such as:

- Arrive late to class or leave early.
- Constantly interrupt the class, getting up from the seat.
- Eat and drink in the classrooms.
- Answer telephone calls during the school term.
- Pack your belongings before the teacher has finished the lesson.
- Fall asleep in the classroom.
- Read newspapers.

- Use mobile devices for purposes other than those of the class, promoting their own distraction and those around them.
- Come to classes without having prepared with the assignments for the session.
- Making negative or mocking comments about their classmates and the teacher.
- Speak out of turn.
- Show unwillingness to listen to others.
- Use vulgar language on campus.
- We ask teachers to take corrective measures to ensure a respectful environment of coexistence that encourages learning and respectful habits, fundamental in the integral and professional training of students. At the beginning of each school year, students should consult with the teacher the specific regulations that will be established in their course and the penalties that could be implemented for non-compliance.

### **Attention to diversity**

The ULACIT curricular approach emphasizes the development of competences through the realization of projects, which allows each student to respond to the academic requirements from their own learning style, and according to their individual abilities and interests. The primary responsibility for learning rests with the student, so the teacher must clarify the expectations of the course from the beginning, offer the guidance and support to satisfy them, granting the necessary flexibility so that each one can define how they will fulfill them and advance to its own rhythm in the development of the assigned projects. The teacher also has the responsibility to provide the required bibliographic material and to offer, throughout the course, continuous feedback that responds to the rubrics established in each project, and therefore, must have a qualitative character in addition to the corresponding quantitative information.

### **Intellectual Property**

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