SUBJECT PROGRAM

I. IDENTIFICATION OF THE SUBJECT

Subject: **Systems Theory.**		Acronym: **INF260.**	Approval date		
UTFSM Credits : **3**	Prerequisites: **IWG-101.**	Exam: **None.**	Faculty.		
SCT Credits : **5**			**Computer Science Department**		
Lecture Hours Weekly : **3**	Weekly Assistantship Hours: **1.5**	Weekly Laboratory Hours: **1.5**	Semester in which it is taught		
			Odd **x**	Even	Both
Formative axis		: **Engineering Sciences - Systems and Management.**			
Total time dedicated to the subject		: **148.5 chronological hours.**			

Subject Description.

This subject is part of the Ingeniería Civil Informática study plan leading to the Licenciatura en Ciencias de la Ingeniería. The purpose of this is for students to learn concepts and properties of what is perceived as a system and to know the techniques for its analysis, understanding and representation.

Entry requirements.

- Distinguish those phenomena of reality that are perceived as emerging totalities and know the techniques and scope of the analytical method.

Contribution to the graduation profile.

The activities carried out in this subject contribute to developing the following specific and transversal skills:

General profile skills:

- Conceive, model, design, evaluate and implement alternative computer technology solutions, based on the analysis of specific problems in any business area.
- Interact with the diverse and multidisciplinary professional environment, both nationally and internationally, establishing networks (Spanish and English), which allow you to improve their professional performance.
- Act with autonomy, flexibility, and initiative in their work.
- Incorporate a dynamic of permanent updating of their skills, typical of a rigorous, effective, and efficient task, based on their determination and tenacity.

Specific Competence:

- Contribute to the formulation of global organizational strategies considering Information Technologies and people as relevant actors.

Elements of Competition:

- Restructures business processes from an IT perspective with a view to optimization.
- Proposes options for the use of information technologies as strategic business factors.

Transversal Competencies:

- Communicate oral and written information effectively within the organizations in which one works, as well as with entities in the environment.
- Develop their work with solid criteria that allow you to ensure quality from a systemic perspective.
- Manifest behaviors and attitudes of social responsibility and tolerance, valuing ethical principles.

Learning Results that are expected to be achieved in this subject.

- Distinguishes phenomena from reality, using different systems epistemologies.
- Identify what a system is, recognizing the attributes that distinguish them.
- Classifies systems by analyzing their viability.
- It represents viable systems, using semi-formal network-type models.

Thematic contents

- Systems epistemology. From Cartesianism to systems thinking.
- Systems theory and general systems theory.
- Systems ontology.
- The concept of systems and the properties of a system.
- Complexity resolution and system modeling.
- Systems classification.
- Viable systems.
- Information systems and management systems in viable systems.
- Modeling viable systems.

Teaching and learning methodology.

- Expository method / Traditional Class.
- Study of cases.
- Cooperative/collaborative learning.

Evaluation and grading of the subject. (Adjusted to Institutional Regulations-Regulation No. 1)

Approval and qualification requirements.

EVALUATION PROCESS

The evaluations carried out in this subject are the following: 2 exams, 2 reading controls, 2 monographs and 2 workshop reports.

Evaluation type	No.	%
Contest **(ce $_1$)**	1	20
Contest **(ce $_2$)**	2	20
Reading control **(co $_1$)**	1	10
Reading controls **(co $_2$)**	2	10
Monograph**(mo $_1$)**	1	10
Monographs**(mo $_2$)**	2	10
Workshop report **(it $_1$)**	1	10
Workshop reports **(it $_2$)**	2	10

Final grade for the subject is calculated as follows:

- Weighted average of the competition scores.
- Weighted average of the monograph notes.
- Weighted average of workshop report notes.
- Weighted average of the grades of the reading controls.

Final grade = 0.2ce $_1$ + 0.2ce $_2$ + 0.1co $_1$ + 0.1co $_2$ + 0.1mo $_1$ + 0.1mo $_2$ + 0.1 it $_1$ + 0.1 it $_2$.

Where:

- Contest = ce
- Control = co • Monograph = mo
- Workshop report = it.

Resources for learning. Bibliography:

Guide Text	• von Bertalanffy L. "General Systems Theory". Ed. Economic Culture Fund, 1969. • Maturana H., Varela F. "The Tree of Knowledge". University Ed., 1984.
Complementary or Optional	• Acevedo H. "El Concepto de Sistemas". Notes Department of Computer Science UTFSM. • Virtual platform.

CALCULATION OF NUMBER OF HOURS OF DEDICATION - (SCT-Chile) - SUBJECT SUMMARY TABLE.

ACTIVITY	Number of hours of dedication		
	Number of hours by hours	Number of	Total number of weeks weeks
PRESENCE			
Lecture or theoretical classes	3	17	51
Assistantship/Exercises	1.5	8	12
Industrial visits (from Field)			
Laboratories / Workshop	1.5	4	6
Evaluations (exams, others)	1.5	2	3
Others (specify)			
NO PRESENCE			
Assistantship			
Mandatory tasks	1.5	17	25.5
Personal Study (Individual or group)	3	17	51
Others (specify)			
TOTAL (HOURS)			**148.5**
Total number of TRANSFERABLE CREDITS			**5**