



<b>DENOMINACIÓN ASIGNATURA:</b> Switching		
<b>GRADO:</b> Telematics Engineering, Telecommunication Technologies Engineering, Mobile and Space Communications Engineering.	<b>CURSO:</b> 3	<b>CUATRIMESTRE:</b> 2

*The course includes 29 sessions distributed through 14 weeks. Each week students will have two sessions, except for one week that will include 3 sessions. Due to the COVID-19 pandemic the Lectures and Labs will be in online mode, while the seminars will be in face-to-face mode.*

COURSE WEEKLY SCHEDULE									
WEEK	SESSION	DESCRIPTION OF THE SESSION CONTENT	GROUPS		Special room for session (computer classroom, audiovisual classroom, etc)	Mark YES/NO if it is a session with two professors	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURE	SEMINAR			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
1	1	Introduction. Switching Techniques.		X		NO	Reading of class notes.	1,66	5
1	2	<b>Packet Switches.</b> Types and architectures. Flow of packets within a router. Slow vs Fast Path. Memory management. Network processing hardware.	X			NO	Review of class lecture. Reading of next class material.	1,66	
2	3	<b>Packet Switches.</b> Types of switching fabrics. HOL. Control Algorithm. Exercises		X		NO	Review of class lecture. Prepare exercises.	1,66	5

2	4	<b>Packet switches.</b> Route Lookup	X			NO	Review of class lecture. Reading of next class material.	1,66	
3	5	<b>Packet switches.</b> Review. Exercises		X		NO	Review of class lecture. Prepare exercises.	1,66	5
3	6	<b>QoS in packet switching.</b> Introduction	X			NO	Review of class lecture. Reading of next class material.	1,66	
4	7	<b>Route Look-Up Lab. Session 1.</b>		X	Computer Classroom	YES	Reading and comprehension of Lab document. Preparation.	1,66	5
4	8	<b>QoS in packet switching.</b> Introduction. Classification. Scheduling algorithms. Concept of Max-Min Fair sharing. GPS, WFQ, DRR.	X			NO	Review of class lecture. Reading of next class material.	1,66	
5	9	<b>Route Look-Up Lab. Session 2.</b>		X	Computer Classroom	YES	Reading and comprehension of Lab document. Preparation.	1,66	5
5	10	<b>QoS in packet switching.</b> Review. Traffic models and shapers: Leaky Bucket, Token Bucket.	X			NO	Review of class lecture. Prepare exercises.	1,66	
6	11	<b>Interim Exam 1. Packet switches.</b>		X		NO	Exam preparation.	1,66	5
6	12	<b>QoS in IP:</b> Diffserv vs Intserv.	X			NO	Review of class lecture. Reading of next class material.	1,66	
7	13	<b>QoS.</b> Review. Exercises		X		NO	Review of class lecture. Prepare exercises.	1,66	5
7	14	<b>MPLS.</b> Introduction.	X			NO	Review of class lecture. Reading of next class material.	1,66	
8	15	<b>QoS.</b> Review. Exercises		X		NO	Review of class lecture. Prepare exercises.	1,66	5

8	16	MPLS. Forwarding. Control.	X			NO	Review of class lecture. Reading of next class material.	1,66	
9	17	MPLS. Review. Exercises		X		NO	Review of class lecture. Prepare exercises.	1,66	5
9	18	MPLS. Applications: Traffic Engineering, Fast Re-route, VPN.	X			NO	Review of class lecture. Reading of next class material.	1,66	
10	19	MPLS. Review. Exercises		X		NO	Review of class lecture. Prepare exercises.	1,66	5
10	20	Interconnection networks. Basic concepts. Equivalences. Crossbars. Multi-stage networks full connectivity. Clos networks.	X			NO	Review of class lecture. Reading of next class material.	1,66	
11	21	MPLS Lab: Session 1		X	Computer Classroom	YES	Reading and comprehension of Lab document. Preparation.	1,66	5
11	22	Interconnection networks. Partial connection networks. Banyan Networks. Sorting and Merging Networks.	X			NO	Review of class lecture. Reading of next class material.	1,66	
12	23	MPLS Lab: Session 2		X	Computer Classroom	YES	Reading and comprehension of Lab document. Preparation.	1,66	5
12	24	Interconnection networks. Partial connection rearrangeable networks. Slepian-Duguid, EBNS.	X			NO	Review of class lecture. Reading of next class material.	1,66	
13	25	Interconnection networks. Review. Exercises.		X		NO	Review of class lecture. Prepare exercises.	1,66	5
13	26	Interconnection networks. RBNS. Self-routed Rearrangeable Networks: Batcher-Banyan.	X			NO	Review of class lecture. Reading of next class material.	1,66	
14	27	Interim Exam 2. QoS+MPLS		X		YES	Exam preparation.	1,66	5
14	28	Interconnection networks. Review. Exercises.	X			NO	Review of class lecture. Prepare exercises.	1,66	
	29	Lab Route-LookUp Exam		X	Computer Classroom	YES	Exam Preparation	1,66	2

							<b>Subtotal 1</b>	<b>48,14</b>	<b>72</b>
							<b>Total 1 (Hours of class and homework weeks 1-14)</b>		<b>120,14</b>
15		<b>Delayed classes, doubts and assignments</b>					1	1	
16		Preparation of assessment and assessment.					5	10	
17									
18									
							<b>Subtotal 2</b>	<b>6</b>	<b>11</b>
							<b>Total 2 (Hours of class and homework weeks 15-18)</b>		<b>17</b>
<b>TOTAL (Total 1 + Total 2. <u>Máximo 180 horas</u>)</b>							<b>137,14</b>		