

Course name:	Risers and Pipelines				
Course organiser:	UFRJ (Murilo Augusto Vaz) murilo@oceanica.ufrj.br & UNICAMP (Celso Morooka) morooka@unicamp.br				
September to December 2020					
The course presents fundamental aspects of design, fabrication, installation and operation of slender structures employed in exploration (drilling risers) and production (risers & pipelines) for oil and gas reservoirs in deepwaters.					
Emphasis will be placed on understanding the mechanical behavior of such systems.					
	date	day	lecturer name	sub-title of lecture	lecture contents
1	28-Sep	Mon	Carlos A. D. Lemos	Importance of Riser and Pipeline Technology for O&G Production	Overview of main technologies employed and challenges.
2	30-Sep	Wed	Jens Hafstad	Pipelines	Buckling and Collapse Under Combined Bending and External Pressure
3	5-Oct	Mon	Jens Hafstad	Pipelines	Collapse propagation
4	7-Oct	Wed	Marcelo Igor	Pipelines	Introduction and Manufacturing Processes; Installation Methods
	12-Oct	Mon	Holidays	Holidays	Holidays
5	14-Oct	Wed	Rafael Solano	Pipelines	Thermal Buckling
6	19-Oct	Mon	Rafael Solano	Pipelines	Design issues
7	21-Oct	Wed	Carlos A. D. Lemos	Flexible risers and umbilical cables	Introduction, Materials, Functions, Configurations, Fabrication and installation
8	26-Oct	Mon	Alfredo Gay Neto	Flexible risers and umbilical cables	Collapse & Burst. Torsion-bending instability
9	28-Oct	Wed	Celso Pesce	Flexible risers and umbilical cables	Axisymmetric and bending analyses
	2-Nov	Mon	Holidays	Holidays	Holidays
10	4-Nov	Wed	Celso Pesce	Flexible risers and umbilical cables	Global analysis and environmental conditions. Umbilical cable
11	9-Nov	Mon	José Renato Mendes de Sousa	Flexible risers and umbilical cables	Finite Element Analysis
12	11-Nov	Wed	Carlos A. D. Lemos	Flexible risers and umbilical cables	Fatigue assessment
13	16-Nov	Mon	Celso Morooka	SCR	Introduction for rigid riser systems and SCR dynamic behavior
14	18-Nov	Wed	Sergio Bordalo	SCR	Hydrodynamic forces due to internal petroleum flow
	23-Nov	Mon	Holidays	Holidays	Holidays
15	25-Nov	Wed	Celso Morooka	SCR	Wave and current forces; platform motion induced
16	30-Nov	Mon	Sergio Bordalo	SCR	Dynamic response due to internal multiphase flow
17	2-Dec	Wed	Celso Pesce	SCR	Riser Mechanics and hydrodynamic loads
18	7-Dec	Mon	Celso Pesce	SCR	Dynamic global structural responses and local analysis
19	9-Dec	Wed	Hideyuki Suzuki	Drilling Risers	Introduction of drilling riser system
20	14-Dec	Mon	Hideyuki Suzuki	Drilling Risers	Failure of drilling riser
21	16-Dec	Wed	Hideyuki Suzuki	Drilling Risers	Effective tension
22	21-Dec	Mon	Hideyuki Suzuki	Drilling Risers	Dynamic response
23	23-Dec	Wed	Hideyuki Suzuki	Drilling Risers	Vortex induced vibration
	28-Dec	Mon	No class	No class	No class
	30-Dec	Wed	No class	No class	No class
	4-Jan	Mon	No class	No class	No class
	6-Jan	Wed	Final Exam	Final Exam	Final Exam

