Colonna1	Colonna2
Systems theory – stability and performance: Equilibria of nonlinear systems; Lyapunov stability for equilibria of nonlinear systems: definition and examples; Stability for LTI systems; From classical performance indicators to modern ones; H_2 performance for linear systems; H_∞ performance for linear systems.	Slides available on beep; H. Khalil, Nonlinear Control, Editore: Prentice-Hall (Chapter 3)
Linear SISO feedback systems – nominal design: Frequency-domain loop-shaping and sensitivity shaping; time-domain state feedback and observer-based output-feedback using classical methods (eigenvalue assignment, LQ control).	Slides available on beep; S. Skogestad, I. Postlethwaite, Multivariable Feedback Control Analysis and Design, Editore: John Wiley and Sons (Chapter 2) B. L. Stevens, F. L. Lewis, E. N. Johnson, Aircraft Control and Simulation: Dynamics, Controls Design, and Autonomous Systems, Editore: John Wiley & Sons https://onlinelibrary.wiley.com/doi/book/10.1002/9781119174882 (Chapter 5)
Linear SISO feedback systems - robust analysis and design: Uncertainty modelling in SISO systems; Robust stability analysis of SISO feedback systems; Nominal and robust performance analysis; Requirement specification; Robust design: unstructured and structured mixed sensitivity synthesis.	S. Skogestad, I. Postlethwaite, Multivariable Feedback Control Analysis and Design, Editore: John Wiley and Sons (Chapter 7 and Chapter 8)
Linear MIMO robust analysis and design: Introduction to MIMO linear systems; Nominal stability and performance in the MIMO case; Robust stability and performance in the MIMO case; MIMO robust design.	S. Skogestad, I. Postlethwaite, Multivariable Feedback Control Analysis and Design, Editore: John Wiley and Sons (Chapter 3)
Implementation issues: modern anti-windup methods for MIMO control systems subject to saturations; implementation of gain-scheduled controllers.	K. J.. Astrom, R. Murray, Feedback systems, Princeton University Press, https://fbswiki.org/wiki/index.php/Main_Page
Aircraft flight control: Introduction to flight control architectures (classical SAS+CAS; dynamic inversion, model following); Aircraft SAS and CAS design (longitudinal and lateral-directional).	B. L. Stevens, F. L. Lewis, E. N. Johnson, Aircraft Control and Simulation: Dynamics, Controls Design, and Autonomous Systems, Editore: John Wiley & Sons https://onlinelibrary.wiley.com/doi/book/10.1002/9781119174882 (Chapter 4)
Rotorcraft attitude control: modelling for attitude control; rotorcraft SAS; rotor state feedback.	Slides available on beep (TBC)
UAV attitude and position control: PID cascade architecture; inversion-based architectures (dynamic inversion and model following).	Slides available on beep (TBC)
Structural control: active vibration control systems.	Slides available on beep (TBC)