Real-time systems
“Lecture outline”

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Lecture available at http://mathieu.delalandre.free.fr/teachings/realtime.html

Lecture outline (1)

- Topics
  A. Real-time systems: principles and concepts “M. Delalandre”
  B. Real-time systems: use-cases and systems “B. Donnette”

		CM	TD/g	TP/g	CC	CT
A	M. Delalandre	8*+2	10		0,5	
B	B. Donnette	4	6	6	0,5	
		14 h	**22 h**		**1**	

*With training tutorial

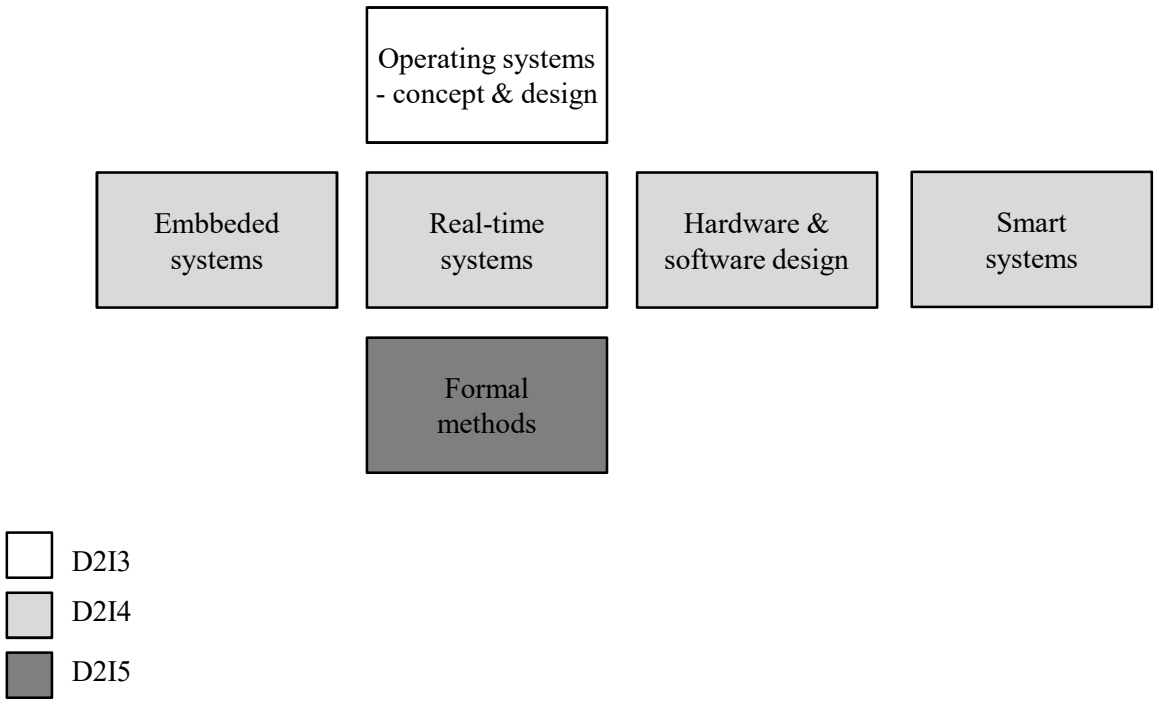
- Parts A: lectures and practical works downloadable from
  http://mathieu.delalandre.free.fr/teachings/realtime.html

- Calendar

Part A	29th of January up to the mid of March
	Final exam by the end of March
Part B	Second semester

Lecture outline (2)

- Lecture goals: to introduce concepts, techniques and algorithms for real-time operating systems.



Lecture outline (3)

Bibliography (SCD)

1. W. Stallings Operating Systems, internals and design principles. Pearson, 2017 (ISBN-13: 978-0134670959).
2. A. Silberschatz and al. Operating Systems Concepts. Wiley, 2018 (ISBN-13: 978-1119439257).
3. A.S. Tanenbaum and H. Bos. Modern Operating Systems. Pearson, 2016 (ISBN-13: 978-9332575776).
4. R.H. Arpaci-Dusseau and A.C. Arpaci-Dusseau. Operating Systems: Three Easy Pieces. Paperback, 2016 (ISBN-13: 978-1985086593).
5. G.C. Buttazo. Hard real-time computing systems. Springer, 2011 (ISBN-13: 978-1461406754).
6. F. Cottet and al. Scheduling in real time systems. Hardcover editions, 2002 (ISBN-13: 978-0470847664).

Lecture outline (4)

Part A. Real-time systems: principles and concepts “M. Delalandre”

1. Introduction to real-time systems
2. Real-time operating systems without resource sharing
    2.1. Foundation of operating systems for soft real-time scheduling
    2.2. Real-time scheduling of independent tasks
3. Real-time operating systems with resource sharing
    3.1. Foundation in synchronization and resource management
    3.2. Resource management in real-time systems
4. Software environment and case studies

Part B. Real-time systems: systems and use-cases “B. Donnette”

At the corner. dynamic priority servers, handling overload, kernel design, real-time and multicore, real-time and distributed systems, etc.