

EE401: Advanced Communication Theory

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Topics & Course Information

Topics

- ➊ **An Intoductory Overview**
- ➋ **Principles of Diversity Theory**
- ➌ **SIMO,MISO,MIMO**
- ➍ **Array Receivers for SIMO and MIMO**
 - ▶ Detection Problem
 - ▶ Estimation Problem
 - ▶ Reception Problem
- ➎ **Localisation of Wireless Signals**
- ➏ **Massive Systems (maMI and maSI)**
- ➐ **mm-Wave Communications**
- ➑ **Spatiotemporal Wireless Communications**
- ➒ **5G**

Useful Connections

- Professor Manikas:
<http://skynet.ee.imperial.ac.uk/manikas.html>
- Lecture Notes:
<http://skynet.ee.imperial.ac.uk/notes/notes.html>
- Blackboard:
<https://bb.imperial.ac.uk>
- Panopto (video recordings of the Lectures):
<https://imperial.cloud.panopto.eu>
directory: [EE4-01 18-19](#)

Coursework


- The coursework is **compulsory** and is a software based assignment (various system designs) using MATLAB.
- **Important Notes:**
 - 1 **Past Examination Papers** are **not** available for this course.
 - 2 More than 40 **MCQ** support this course.


Course Academic Weeks & Deadlines

- Table-1 shows the Autumn Term academic weeks (A1-A11) and the deadlines of the various parts of the coursework

Table-1			
Academic Weeks - Autumn Term			Comments
Week-A1	1 Oct. 2018	7 Oct. 2018	
Week-A2	8 Oct. 2018	14 Oct. 2018	
Week-A3	15 Oct. 2018	21 Oct. 2018	
Week-A4	22 Oct. 2018	28 Oct. 2018	
Week-A5	29 Oct. 2018	4 Nov. 2018	
Week-A6	5 Nov. 2018	11 Nov. 2018	
Week-A7	12 Nov. 2018	18 Nov. 2018	
Week-A8	19 Nov. 2018	25 Nov. 2018	
Week-A9	26 Nov. 2018	2 Dec. 2018	
Week-A10	3 Dec. 2018	9 Dec. 2018	
Week-A11	10 Dec. 2018	16 Dec. 2018	Formal Coursework Deadline: Friday at 5:30pm
			Lectures on Week-A11 have moved to other weeks

Books and Other References

 D. Tse, P. Viswanath,
"Fundamentals of Wireless Communication",
Cambridge University Press, 2005.

 A. Manikas,
"Differential Geometry in Array Processing",
Imperial College Press, 2004.

 A. Manikas,
"Interference Cancellation Techniques Experiment",
<http://skynet.ee.ic.ac.uk/am1.zip>