The Fu Foundation School of Engineering and Applied Science

Department of Electrical Engineering

COLUMBIA UNIVERSITY

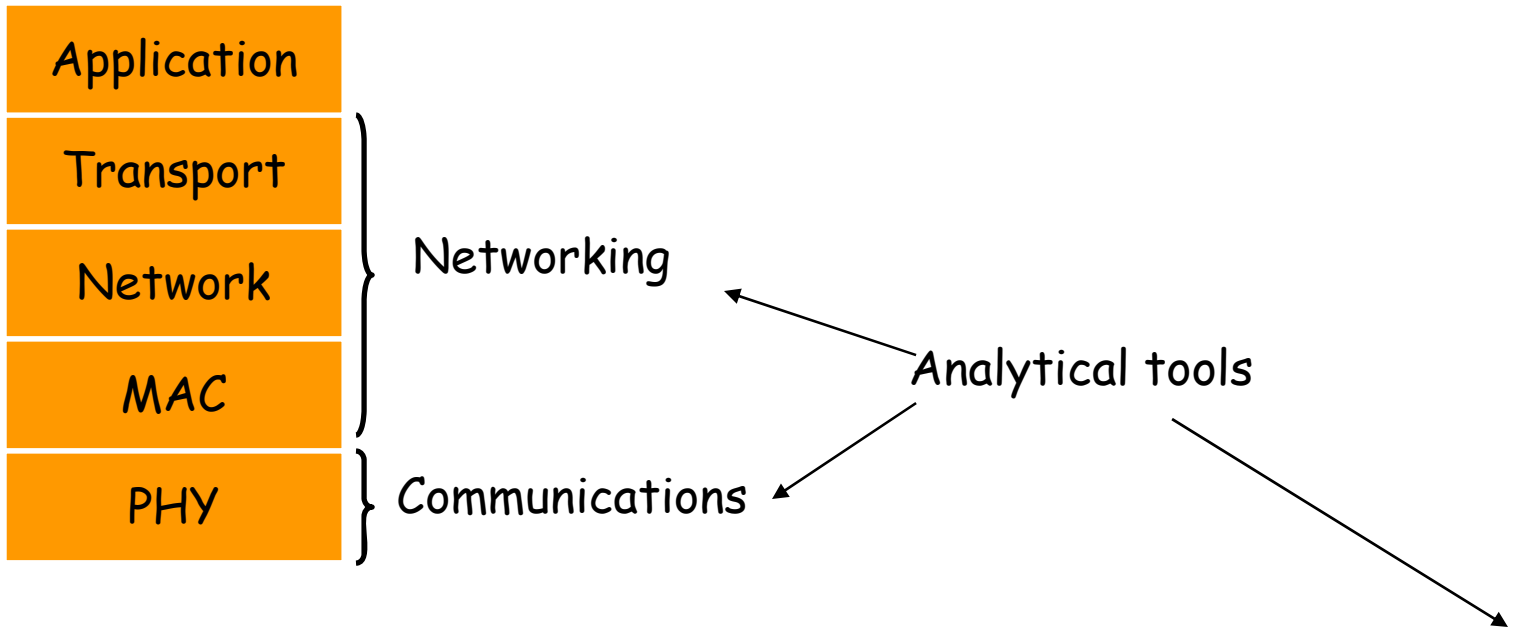
IN THE CITY OF NEW YORK

Networking & Communications

Prof. Gil Zussman

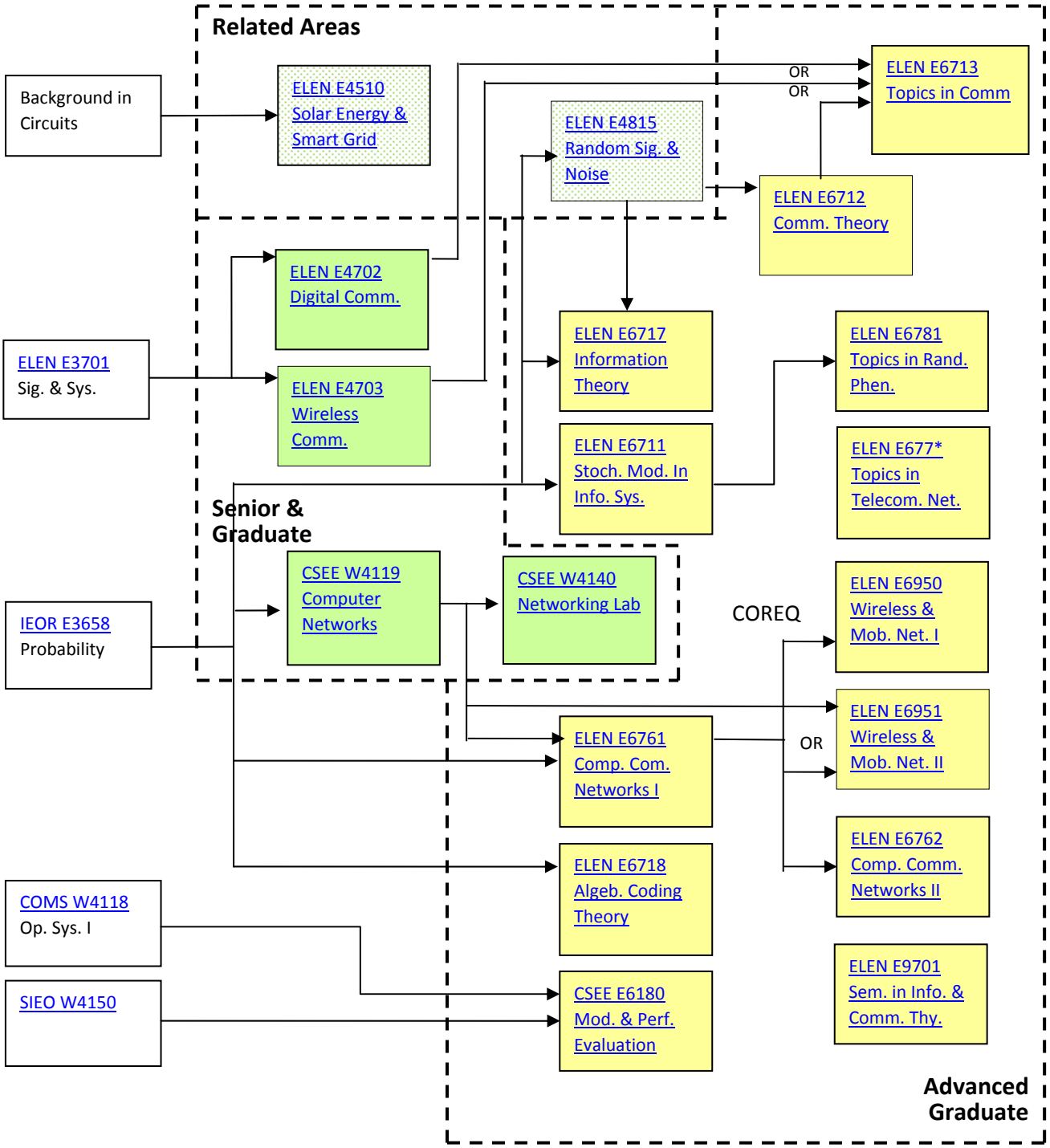
Networking and Communications

- Networks
  - Wireline – Local Area, …, Internet
  - Wireless – Ad Hoc, Sensors, Mesh, Cellular, etc.



COMMUNICATIONS & NETWORKING

Senior/graduate & Advanced graduate courses in EE

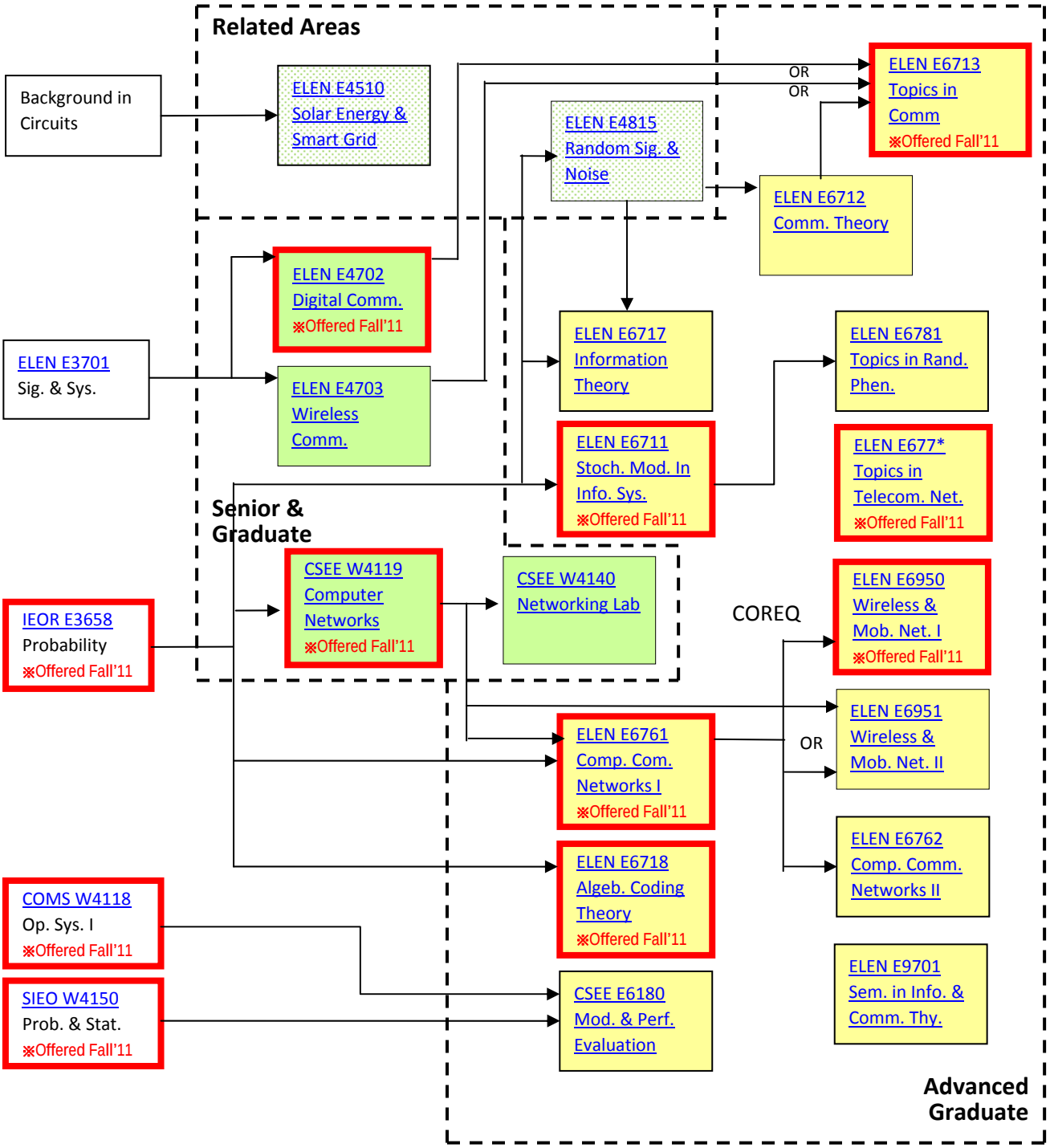


Recent topics for ELEN E677*:

ELEN E6770 Topic: Next Generation Networks (*Fall 2010, Fall 2009, Fall 2008*)
ELEN E6771 Topic: Next Generation IP Networks (*Fall 2008*)
ELEN E6772 Topic: Resilient Networking (*Spring 2008*)
ELEN E6773 Topic: Networks & Markets (*Spring 2008*)
ELEN E6774 Topic: Cyber-Physical Systems, Transportation (*Spring 2009*)
ELEN E6775 Topic: Mesh Optical Networks (*Spring 2009*)
ELEN E6776 Topic: Content Distribution Networks (*Fall 2011, Fall 2010, Fall 2009*)
ELEN E6777 Topic: Communication Protocols (*Spring 2010*)
ELEN E6778 Topic: Applying networking techniques to physical systems (*Spring 2011*)

COMMUNICATIONS & NETWORKING FALL 2011)

Senior/graduate & Advanced graduate courses in EE



Recent topics for ELEN E677*:

ELEN E6770 Topic: Next Generation Networks (*Fall 2011, Fall 2010, Fall 2009, Fall 2008*) ※Offered Fall '11

ELEN E6771 Topic: Next Generation IP Networks (*Fall 2008*)

ELEN E6772 Topic: Resilient Networking (*Spring 2008*)

ELEN E6773 Topic: Networks & Markets (*Spring 2008*)

ELEN E6774 Topic: Cyber-Physical Systems, Transportation (*Spring 2009*)

ELEN E6775 Topic: Mesh Optical Networks (*Spring 2009*)

ELEN E6776 Topic: Content Distribution Networks (*Fall 2011, Fall 2010, Fall 2009*)

ELEN E6777 Topic: Communication Protocols (*Spring 2010*)

ELEN E6778 Topic: Applying networking techniques to physical systems (*Spring 2011*)

Additional Classes

- Communications (EE)
  - ELEN 6713 Topics in Communications: Wireless Sensing
- Networking (EE, CS)
  - ELEN 6885 Topics in Signal Processing: Network Science
  - COMS 4995 Special Topics In Computer Science, I (*Social* Information Networks)
  - COMS 6181 Advanced Internet Services
  - COMS 6998 Topics In Computer Science, I (Cloud Computing: Concepts and Practice)
  - Analytical Tools (CS, IEOR)
  - CSOR 4231 Analysis of Algorithms I
  - IEOR - Optimization, Integer Programming, Stochastic models, etc.

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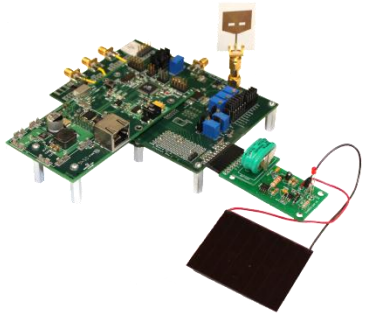
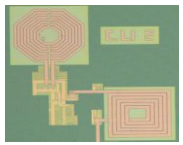
A poster and demo session on Energy-Harvesting Active Networked Tags (EnHANTs)

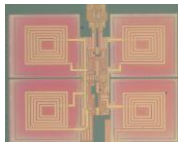
enhants.ee.columbia.edu

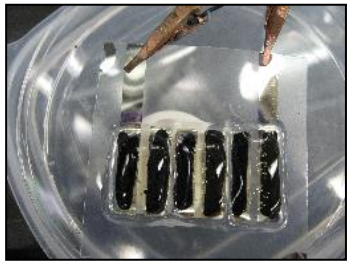


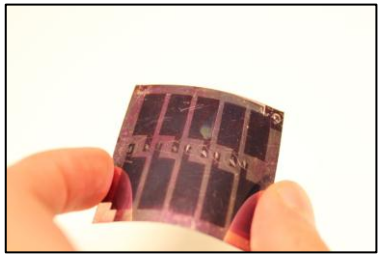
Wednesday August 31st
2:00pm – 4:00pm
CEPSR 8LE1

Presenting research projects by graduate and undergraduate students in Columbia's EE and CS departments









Organic solar cells, thin film printable batteries, characterizing energy availability, ultra wideband transceiver design, protocol development and implementation, and more!

Work done under the guidance of Professors Luca Carloni, Peter Kinget, Ioannis Kymissis, Dan Rubenstein, Xiadong Wang, and Gil Zussman.

Energy-Harvesting Active Networked Tags (EnHANTs) are small, flexible, and energetically self-reliant devices that can be attached to items that are traditionally not networked. EnHANTs will enable the Internet of Things by providing infrastructure for novel tracking applications such as locating misplaced items and continuous peer-based monitoring of objects.