EE STUDY ABROAD PROGRAMS 2018-2019

Professor Josep Miquel Jornet, Ph.D.
Director of the EE Study Abroad Programs
Department of Electrical Engineering
University at Buffalo
Office: 222 Davis Hall
E-mail: jmjornet@buffalo.edu
Web: ubnano.tech

Friday, September 14, 2018
Have you ever thought of studying abroad for (at least) one semester?

Option a)

Option b), c), d), e), …
A better question is:

- Are you ready to make a difference in your career?
  - Taking the exact same courses as you would take here, in English and with no “detour” from your flowsheet
  - Learning or improving your knowledge of a foreign language and culture
  - Meeting people from all over the world
  - Perhaps even saving money
If you answered yes…

• Congratulations! UB EE is ready to help you fulfil your aspirations and take you to the next level!
Four EE-Sponsored Programs

ENSEA, France

Sapienza, Italy

Chalmers, Sweden

UPV, Spain
Who is eligible?

• The program at ENSEA (FAME) is designed for junior students in their second semester
  ▪ Apply NOW at the beginning of your junior fall semester

• The other three programs are designed for senior students in their Fall and/or Spring semesters
  ▪ Apply at the beginning of your junior spring semester
# Course Flowsheet

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
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<tbody>
<tr>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
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<tr>
<td>MTH 141 Calculus I</td>
<td>MTH 142 Calculus II</td>
<td>MTH 306 Intro to Differential Equations</td>
<td>MTH 241 College Calculus III</td>
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<tr>
<td>CHE 107 Chemistry I</td>
<td>PHY 107 Physics I</td>
<td>PHY 108 General Physics II</td>
<td>PHY 207 General Physics III</td>
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<td>EAS 199 First-year Seminar</td>
<td>EE 178 Digital Principles</td>
<td>PHY 158 General Physics II Lab</td>
<td>PHY 257 General Physics III Lab</td>
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<tr>
<td>ENG 105 Communication Literacy 1</td>
<td>EAS 202 Engineering Impact on Society</td>
<td>EE 202 Circuit Analysis I</td>
<td>EE 324 Applied EM</td>
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<tr>
<td>Thematic or Global Pathway Course</td>
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<td>EAS 360 STEM Comms.</td>
<td>EE 305 Probability &amp; Statistics</td>
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<td>EAS 240 Programming for Engineers</td>
<td>EE 309 / EAS 230 Linear Algebra / Comp.</td>
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<td>MTH 309 / EAS 230 Linear Algebra / Comp.</td>
<td>EE 336 Fundamentals of Energy Systems</td>
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<td>Thematic or Global Pathway Course</td>
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<td>UBC 399 UB Capstone</td>
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<tr>
<th><strong>Hours</strong></th>
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**UBC 494 Senior Design Implementation**
Chalmers University
Gothenburg, Sweden
Chalmers University  
Gothenburg, Sweden

• Top-ranked Engineering School in Sweden  
  ▪ Among the first in Europe!

• Exchange Model  
  ▪ UB Senior students take master-level courses in English for up to two semesters  
  ▪ Students are registered at UB  
    • Can take online version of required courses such as EE 408 Senior Seminar  
  ▪ Only administrative fees are paid at Chalmers
Very Comprehensive Program

- Students can take courses in all focus areas in UB EE (Communications & Networking, Electronics & Solid State Physics, Photonics & Optics, Power Systems)
  - Digital Communications
  - Wireless Communication Networks
  - Multimedia and Video Communication
  - Real Time Systems
  - Introduction to Electronic System Design
  - Introduction to Integrated Circuit Design
  - Methods for Electronic System Design and Verification
  - Electric Drives
  - High Voltage Engineering
  - Power Market Engineering
  - Power System Operation
  - Power System Analysis
How To Find Courses at Chalmers

1. Go to the Student Portal:
   https://student.portal.chalmers.se/en/Pages/default.aspx
2. Click on Studies
3. Click on Programme information
4. Click on Search programme
5. On Programme type select Masters Programme
6. Click on Search
7. Example: click on MPCOM COMMUNICATION ENGINEERING, MSC PROGR
How To Find Courses at Chalmers

8. You will see the courses offered in the academic year 2018/2019
   ▪ Their academic year is divided into 4 terms

9. Take for instance AUTUMN TERM Study period 1
   ▪ Starts early September

10. For example, click on the course SSY121 Introduction to Communication Engineering (7.5 ECTS)
    • NOTE: 2 ECTS = 1 US credit hour

11. The following information on the course is shown: Eligibility, Prerequisite, Aim, Learning outcome, Content/Organization/Literature
Sapienza, University of Rome
Rome, Italy
Sapienza, University of Rome
Rome, Italy

• Top-ranked Engineering School in Italy
  ▪ Largest university in Europe, one of the oldest (founded in 1303 A.D.)

• Exchange Model
  ▪ UB Senior students take master-level courses in English for up to two semesters
    – Students are registered at UB
      • Can take online version of required courses such as EE 408 Senior Seminar
    – Only administrative fees are paid at Sapienza
Focused Programs

• Sapienza should be the target destination for students willing to specialize in Communications, Networking, Machine Learning, AI and other CSE-flavored topics
  - Wireless Networking Systems
  - Computer Networks
  - Network Infrastructures
  - Computer and Network Security
  - Machine Learning
  - Artificial Intelligence I & II
  - Data Management
  - Distributed Systems
  - Robotics 1
  - Neural Networks
  - Micro Controllers
  - Computer Graphics
  - Vision and Perception
Course Availability

• For the most updated list, go to:
  ▪ [http://cclii.dis.uniroma1.it/?q=en](http://cclii.dis.uniroma1.it/?q=en)
  ▪ MS in Computer Science
  ▪ MS in Artificial Intelligence and Robotics

• Complete list of courses:
  ▪ [http://inspatdiet.uniroma1.it/?page_id=4535](http://inspatdiet.uniroma1.it/?page_id=4535)
Universidad Politecnica de Valencia
Valencia, Spain
Universidad Politecnica de Valencia
Valencia, Spain

• Top-ranked Engineering School in Spain

• Exchange Model
  ▪ UB Senior students take master-level courses in English for up to two semesters
    ▫ Students are registered at UB
      • Can take online version of required courses such as EE 408 Senior Seminar
    ▫ Only administrative fees are paid at UPV
Comprehensive Program

- Students can take courses in all focus areas in UB EE (Communications & Networking, Electronics & Solid State Physics, Photonics & Optics, Power Systems)
  - Digital Communication Systems
  - Mobile and Wireless Communication Systems
  - Satellite Communications Systems
  - Optical Wireless Systems
  - Image and Video Processing
  - Nanophotonics
  - Optical Signal Processing in Optical Networks
  - Content Distribution Mechanisms over IP Networks
  - Power Electronics
  - Advanced Industrial Electronic Systems
  - Computer Systems Security
  - Computer Architecture And Engineering
  - Software Engineering
Course Availability

• For the most updated list, go to:
  http://www.buffalo.edu/~jmjornet/StudyAbroad/UPV_ENG_courses.pdf
ENSEA, FAME Program
Cergy, France
FAME Program

• French American Exchange Program
  ▪ Directors:
    – Professor Philippe Marc
    – Professor Vanita Miskita
  ▪ Partner Institutions:
    – IIT (Illinois Institute of Technology)
    – UB (University at Buffalo), The State University of New York
    – Georgia Tech Europe, Lorraine
    – University of Pittsburgh
    – Colorado School of Mines
    – University of Colorado at Boulder
    – University of Illinois at Urbana-Champaign (UIUC)
    – University of Michigan at Ann Arbor
ENSEA, FAME Program

Cergy, France

• Top University located in Cergy, France
  ▪ 35 minutes from the center of Paris!

• Study Abroad Model
  ▪ UB Junior students in their second semester take the exact same courses as they would take at UB, in English and in smaller focused groups (bring your GPA up!)
    – Students are directly registered in the FAME program at ENSEA
      • Discounted rates for groups of UB students!
    – Students pay at UB to transfer their credits upon return
      • Seamless transfer of credits!
Direct Mapping of Courses

- Electronic Circuits & Laboratory
  - UB EE 311 & 353 Electronic Devices & Circuits 2 – 6 credits
- Computer Architecture and Introduction to Microprocessors
  - UB EE 379 Embedded Systems – 3 credits
- Communication Systems
  - UB EE 383 Communication Systems – 3 credits
- Fundamentals of Power Engineering
  - UB EE 336 Fundamentals of Energy Systems – 3 credits
- Algorithms Design and Analysis
  - UB CSE 331 Introduction to Algorithm Analysis and Design – 3 credits
- Operating Systems
  - UB CSE 421 Introduction to Operating Systems – 3 credits
- Signals and Systems
  - UB EE 205 Signals and Systems – 3 credits
- Probability and Statistics
  - UB EE 305 Applied Probability – 3 credits
- French Language and Culture
  - UB GEN ED – 3 credits
- Research Internship – 3 credits
  - UB EE 498/499 – 3 credits
Cost of Study Abroad???

- **Tuition???, €€€
- **Housing???, $$$
- **Transportation???, €€€
Cost of Study Abroad 😊😊😊

- In all the programs:
  - Your financial support is still in place!!!

  - Living in Europe is comparable (or even cheaper) than living in Buffalo (more bang for the buck…)

  - Please check the budget sheets in each program
EE Fellowships

- EE provides 10 travel fellowships per year, $2,000 per fellowship
  - At least enough to cover the roundtrip air-fare!

- Fully compatible with other Fellowships provided by the UB Study Abroad Office!
Academic Calendar

• Chalmers University
  ▪ September 1 - January 15
  ▪ January 20 – June 1

• Sapienza, University of Rome
  ▪ October 1 – December 20 (Exams in January, February)
  ▪ February 20 – May 30 (Exams in June, July)

• UPV
  ▪ September 15 - December 20 (Exams in January, February)
  ▪ February 1 - May 30 (Exams in June, July)

• ENSEA:
  ▪ January 18 – May 30
How to Apply?

- **Chalmers University**

- **Sapienza, University of Rome**

- **UPV**

- **ENSEA:**
Deadlines

• To Start in the Spring Semester
  ▪ Apply by October 1\textsuperscript{st}!

• To Start in the Fall Semester
  ▪ Apply by March 15\textsuperscript{th}!

• Please contact us if you need flexibility with the dates above
You are not alone!

• EE (Josep Jornet, jmjornet@buffalo.edu) will work with you individually to pre-approve the list of courses you will take abroad so you will not have problems with requirements/equivalencies

• UB Study Abroad (Krista Paszkowsky, studyabroad@buffalo.edu) will work with you on everything else!
Interested?

• Download these slides from:  
  http://www.acsu.buffalo.edu/~jmjornet/StudyAbroad/F2018.pdf

• Leave us your name & e-mail address
  ▪ We will email you these slides, any updates, upcoming deadlines

• Feel free to contact
  ▪ Prof. Josep M. Jornet: jmjornet@buffalo.edu
  ▪ Krista Paszkowsky: kristapa@buffalo.edu
THANKS FOR YOUR ATTENTION

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FAME
French AMerican Exchange program
A semester in France

Electrical Engineering, Computer Science and Telecommunications
What are the 7 myths of Study Abroad

- COST

- SAFETY
  - Reality: Paris is a safe city.

- LANGUAGE
  - Reality: Courses are in English (and in small groups)
COMPLETION OF MAJOR REQUIREMENTS
- Reality: All courses offered have been approved by your university

ACCEPTANCE
- Reality: automatic if you are selected by your school

TRANSFER OF CREDITS
- Reality: all credits are transferable

DELAY OF GRADUATION
- Reality: Your credits will be transferred and hence you will graduate « on time »
What are the benefits of this program?

- Transferability of courses
- Experience of a foreign language
- Better employability in the future
- Adaptability
- Self discovery
École Nationale Supérieure de l’Électronique et des ses Applications (since 1952)

❖ Location: Cergy, 40 minutes from Paris

Institution key figures

❖ More than 6,500 alumni
❖ 300 Undergraduates, 450 Graduates
❖ 70 PhD & post-doctoral students
❖ 38 student associations
❖ 90 tenured professors & 180 visiting professors from industry
❖ 2 research teams & 20 teaching laboratories
❖ 200 partner companies
Global E3

- 70 Engineering schools worldwide
  - 35 US
  - 35 international

www.ge3.org

AMPERE

- 7 Engineering schools in France specialized in ECE and CS
  - 5,000 students

http://www.ampere-eng.net/
Our partners

- University at Buffalo, The State University of New York
- Illinois Institute of Technology
- University of Michigan
- Mississippi State University
- University of Pittsburgh
- University of Colorado at Boulder
- Michigan Technological University
- Georgia Tech
- University of Illinois at Urbana-Champaign
- ENSFA
What?
- Engineering courses taught in English by ENSEA professors
- Meet French and other international students

When?
- European Spring semester (mid January – mid/end May)

Who?
- Students who will be in their third year (SENIORS) of an undergraduate ABET-accredited ECE/CS major

Where?
- ENSEA, Cergy (20 miles NW of Paris)
Number of students
❖ Between 7 to 20

Costs
❖ Tuition: 3,500 € for the semester
❖ Housing: 600 € per month
❖ Meal: 3 to 10 €
❖ Transport: 5 € (train to Paris)

Integration within ENSEA and the French culture
❖ Buddy system
❖ Student associations (sports, arts, cooking, …)
❖ Visits organized by ENSEA IRO
Courses offered

- Electronic Circuits & Laboratory (6 c.h.)
- Signals and Systems (3 c.h.)
- Introduction to Microprocessors and Assembly Language Programming (3 c.h.)
- Communications Systems (3 c.h.)
- Probability and Statistics (3 c.h.)
- Power Engineering (3 c.h.)
- Algorithms design and analysis (3 c.h.)
- Operating Systems (3 c.h.)
- Capstone project
- French Language and Culture (3 c.h.)
NEW COURSES 2019 3 CH

- Microelectronics
- UAVs/Drones
- Internet of Things
- Image and Virtual Reality
- Artificial Intelligence and Big Data
CALENDAR 2019

JAN  Saturday 19  Arrival
Monday 21  Beginning of classes
Wednesday May 29  End of classes

Winter Break 2 weeks  Feb 25 to March 8
Spring Break 2 weeks  April 22 to May 3
Online convex optimization and machine learning algorithms: applications to communications and beyond

E.V. Belmega, https://sites.google.com/site/evbelmega/

Computer Vision with application to Computer-Aided Diagnostic / Analysis.


Lattice-based cryptography. Key generation algorithms based on the LWE (Learning With Errors) problem.

Non-linear control theory
F. Nicolau, https://sites.google.com/site/florentinanicolau

Computer vision and deep learning.

Control theory

3D reconstruction in virtual reality
H. Tabia, https://perso-etis.ensea.fr/tabia/
How to apply?

Send an email to ri@ensea.fr along with your resume and cover letter explaining your motivations and the desired subject, length and period.
FAME Website: http://www-fame.ensea.fr

VISAS
- ENSEA International Relations Office, ri@ensea.fr

“Study abroad: best experience of my life”
- By Shanon Ludden (IIT)
- http://archives.iit.edu/technews/volume165/tnvol165no2.pdf
With **FAME** Europe is your playground
More than words!
"Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover."
-Mark Twain

"The world is a book and those who do not travel have read only one page."
-Saint Augustine