

# INFORMATION SESSION

FACULTY LED /SHORT TERM STUDY ABROAD COURSE  
SUMMER 2020

ENGY: 4060 NUCLEAR REACTOR DETECTION AND MEASUREMENT  
3 CREDITS



May 23 - June 6, 2020

# UMASS LOWELL

## ENGY 4060: NUCLEAR REACTOR DETECTION & MEASUREMENT SUMMER 2020

### Course Details

- ✓ Professor Sukesh Aghara
- ✓ Host: Budapest University of Technology and Economics
- ✓ Course: ENGY.4060 Nuclear Reactor Detection & Measurement
  - 3 Credits
  - Pre-Requisite: ENGY.3310 Fundamentals of Nuclear Science and Engineering
- ✓ Undergraduate and Graduate students can apply
- ✓ Application deadline (Commitment Letter signed) by March 15, 2020
- ✓ May satisfy an Arts & Humanities Breath of Knowledge Requirement (BOK) – More info TBD

**Program Description: Students will have access to perform several experiments and conduct research using a research reactor on campus. Devices such as proportional counters, solid state and scintillator detectors and reactor sources will be used to perform your experiments.**

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### Reactor Exercises (One Group)

	<i>27-May</i>	<i>28-May</i>	<i>29-May</i>	<i>30-May</i>	<i>31-May</i>
	Monday	Tuesday	Wednesday	Thursday	Friday
am	Welcome Radiation safety briefing Tour in the reactor building	Neutron activation analysis	Delayed neutron parameters	Thermal neutron flux distribution	Safeguards measurements
pm	Introductory lectures	Report preparation, consultancy	Report preparation, consultancy	Report preparation, consultancy	Report preparation, consultancy
	<i>3-Jun</i>	<i>4-Jun</i>	<i>5-Jun</i>	<i>6-Jun</i>	<i>7-Jun</i>
	Monday	Tuesday	Wednesday	Thursday	Friday
am	Criticality experiment	Reactor operation	Void effect and reactivity worth	Diffusion length in thermal column	Presentation of the results, discussion
pm	Report preparation, consultancy	Report preparation, consultancy	Report preparation, consultancy	Report preparation, consultancy	Evaluation of the program by the students Farewell
	Program points in bold require reactor operation				

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### Reactor Exercises (Two Groups)

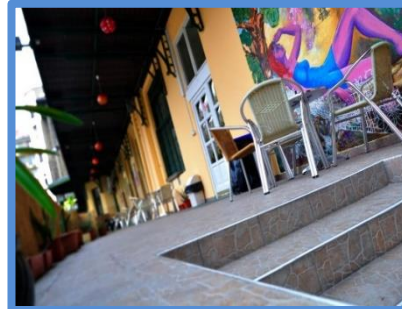
Alternative Program for Two Groups						
	Group	<b>27-May Monday</b>	<b>28-May Tuesday</b>	<b>29-May Wednesday</b>	<b>30-May Thursday</b>	<b>31-May Friday</b>
am	A	Welcome	Diffusion length in thermal column	Neutron activation analysis	Delayed neutron parameters	Thermal neutron flux distribution
		Radiation safety briefing				
	B	Tour in the reactor building	Delayed neutron parameters	Thermal neutron flux distribution	Neutron activation analysis	Diffusion length in thermal column
pm		Introductory lectures	Report preparation, consultancy	Report preparation, consultancy	Report preparation, consultancy	Report preparation, consultancy
	Group	<b>3-Jun Monday</b>	<b>4-Jun Tuesday</b>	<b>5-Jun Wednesday</b>	<b>6-Jun Thursday</b>	<b>7-Jun Friday</b>
am	A	<b>Criticality experiment</b>	Report preparation, consultancy	Safeguards measurements	<b>Reactor operation</b>	Presentation of the results, discussion
	B	Report preparation, consultancy	<b>Void effect and reactivity worth</b>	<b>Reactor operation</b>	Safeguards measurements	
pm	A	Report preparation, consultancy	<b>Void effect and reactivity worth</b>	Report preparation, consultancy	Report preparation, consultancy	Evaluation of the program by the students
	B	<b>Criticality experiment</b>	Report preparation, consultancy			Farewell
Program Points in Bold require reactor operation						

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### Housing

- ✓ Options vary from double rooms with private bathroom to quadruple rooms with shared bathroom
- ✓ Public transportation: 15 min to the campus





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### Travel

#### **Passport**

- ✓ Make sure your passport is valid at least 2 months AFTER the program's end date. If you do not have passport, check how to obtain one here:
- ✓ [https://www.govoffices.com/forms-passport/?keyword=how%20do%20i%20get%20a%20passport&creative=399214148350&gclid=CjwKCAiA4Y7yBRB8EiwADV1haVwCPo2lvAGb71iDqH33IsIYJFBGoj6MENGIY8NjRgR6Zuq\\_OdkSoBoCWMQQAvD\\_BwE](https://www.govoffices.com/forms-passport/?keyword=how%20do%20i%20get%20a%20passport&creative=399214148350&gclid=CjwKCAiA4Y7yBRB8EiwADV1haVwCPo2lvAGb71iDqH33IsIYJFBGoj6MENGIY8NjRgR6Zuq_OdkSoBoCWMQQAvD_BwE)
- ✓ A visa may be required for non-US citizens

#### **Flight**

- ✓ Book own flight, UML travel program vendor will provide tickets
- ✓ Use points
- ✓ Allows for Pre/Post Travel

#### **Travel Dates**

- ✓ Saturday, May 23 – Saturday, June 6, 2020 (May shift slightly)

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### Culture Activities/Sites

[https://www.tripadvisor.com/Attraction\\_Products-g274887-0a60-a\\_sort.-Budapest\\_Central\\_Hungary.html#ATTRACTION\\_LIST](https://www.tripadvisor.com/Attraction_Products-g274887-0a60-a_sort.-Budapest_Central_Hungary.html#ATTRACTION_LIST)

- ✓ Szechenyi Spas
- ✓ Guided Tours in Budapest on MonsteRoller e-Scooter
- ✓ Buda Castle district Night Time Dark History and Vampire Walking Tour
- ✓ Budapest Historical Sightseeing – Walking Tour
- ✓ Budapest Central Market Hall Walk and Tastings
- ✓ Buda Castle's Secret with a Historian Tour



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### Finances

#### **Program Cost**

- ✓ \$2900 – includes pre/post travel orientation meal, accommodations, transportation while in Budapest, most meals, cultural activities, academic materials and experiment fees.
- ✓ Some “spending money”
- ✓ Weekend meals on own
- ✓ All awards, tuition/fees and program fees are billed through the student's SIS account and due/paid along with normal billing schedules/processes.
- ✓ Tuition Cost \$1020 for 3 credits

#### **Scholarships**

- ✓ Funds available: Contact Fern MacKinnon in the Office of Study Abroad and Int'l Experiences @ [Fern\\_MacKinnon@uml.edu](mailto:Fern_MacKinnon@uml.edu)



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### Student Requirements

<https://www.uml.edu/international-programs/>

- ✓ Students must have a cumulative grade point average of 2.5
- ✓ Not have a disciplinary record active during the period of study abroad
- ✓ Maintain full-time status for semester/academic year programs
- ✓ Have completed at least 1 full-time semester at UMass Lowell

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*For more information, contact [Kathleen\\_Vaillancourt@uml.edu](mailto:Kathleen_Vaillancourt@uml.edu)*

