



# Postgraduate Research Prospectus 2016/2017



**Faculty of Science,  
Eastern University, Sri Lanka.**

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## **Eastern University, Sri Lanka**

The Eastern University, Sri Lanka, the 9<sup>th</sup> National University was established first as Batticaloa University College (BUC) on 01.08.1981 with two Faculties viz; Faculty of Science, and Faculty of Agriculture. Subsequently the University College was upgraded as Eastern University, Sri Lanka on 26.09.1986 with two additional faculties viz; Faculty of Commerce & Management and Faculty of Arts & Culture. The Faculty of Health-Care Sciences of the Eastern University, Sri Lanka was established in 2004.

### **Faculty of Science**

Faculty of Science consists of five Departments, namely, Department of Botany, Department of Chemistry, Department of Mathematics, Department of Physics and Department of Zoology. The Faculty offers the subjects Botany, Chemistry, Applied Mathematics, Pure Mathematics, Computer Science, Physics and Zoology.

#### **Vision**

Faculty of Science, Eastern University, Sri Lanka, aims to be a national centre of Excellent for higher learning and research with the competitive advantage, responsive to the dynamics of the regional, National and Global conditions.

#### **Mission**

Faculty of Science is to be a National Centre for Excellent in teaching and research. Our teaching and researches are geared to regional and national needs. Batticaloa District has ample of human and natural resources. Curriculum is geared to education and training suited to modern needs of the globe, thereby enhancing the socio-economic development of the region and people. The Faculty is committed to work for this goal.

The postgraduate programmes offered by the Faculty may be classified into:

- Higher Degree programmes by Research: Master of Philosophy (M.Phil.) and Doctor of Philosophy (Ph.D.) programmes
- Taught Masters Degree and Postgraduate Diploma programmes<sup>#</sup>

Through its postgraduate courses and research programs, it is intended to produce a knowledgeable and skilled human resources integrated with positive attitudes towards sustainable development.

Medium of instruction of the program will be in English.

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<sup>#</sup>*There will be a separate prospectus for the Taught Masters degree*

## **Administrative Staff**

**Website:** [www.fsc.esn.ac.lk/](http://www.fsc.esn.ac.lk/)

### **Dean of the Faculty**

Dr. (Mrs.) M. Vinobaba

B.Sc. (Hons) (Jaffna), D.Phil. (Sussex-UK)

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### **Head / Department of Botany**

Mrs. U. Mathiventhan

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Senior Lecturer

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### **Head / Department of Chemistry**

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### **Head / Department of Mathematics**

Mrs. S. Sathaanathan

B.Sc. (Hons) (EUSL), M.Phil. (USJP).

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### **Head / Department of Physics**

Dr. P. Peratheepan

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### **Head / Department of Zoology**

Prof. P. Vinobaba

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Professor in Zoology

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### **Postgraduate Research Opportunities ( M.Phil./Ph.D.)**

Faculty of Science has Strong academic background with significant numbers of Professors and senior academics in varieties of discipline. Prospective applicants are encouraged to consult the Academic Staff and Research pages (<http://www.fsc.esn.ac.lk/>) for further information on the research interests of groups and individual staff members. This information is vital when researching potential supervisors.

### **Fields of Specialization in Botany**

- Population Biology
- Natural Resources Management
- Phytoplankton
- Plant Pathology
- Plant Biochemistry
- Socio-ecology of mangroves

### **Fields of Specialization in Chemistry**

- Theoretical and Computational Chemistry
- Syntheses and characterization of ligands and d- & f- block metal complexes
- Use of locally available tannin materials to make polymeric materials
- Structure and dynamic studies of polymers
- Water quality Analysis
- Nano materials and Nano-sensors

### **Fields of Specialization in Mathematics**

- Lie Group Analysis of Ordinary and Partial Differential Equations
- General Relativity: Exact solutions to the Einstein field equations; Relativistic stars
- Numerical Analysis
- Numerical Methods for Ordinary Differential Equations/Partial Differential Equations
- Complex Analysis
- Category Theory
- Biological Modeling

### **Fields of Specialization in Physics**

- Strongly correlated electron systems (SCES)
- Physics Education
- Nanocomposite materials
- Exploration of magnetism

### **Fields of Specialization in Zoology**

- Aquaculture fisheries and Environment
- Fish parasites
- Developmental Genetics, Developmental Biology and Entomology
- Fish Microbiology
- Animal Behaviour
- Nutritional Biochemistry
- Aquatic Food Science and Technology
- Aquatic PathoBiology/ Fish and Shellfish Diseases

## Registration

The candidate with the assistance of the supervisor should submit the research proposal as shown in the Annexure- I to the Faculty board of Science for approval. The research proposal will be assessed for suitability for a research degree.

Applicants who have obtained approval of Faculty Board of Science and the Senate, must register for the M.Phil./Ph.D. Degree within six months of gaining such approval. Thereafter, registration should be renewed at the end of each 12 month period, with the approval of the Supervisor/s and Faculty Board of Science.

Applicants are required to complete and submit their application forms to the Dean of the Faculty through the supervisor/s and the Head of the relevant department. The application forms are available at the Office of Dean of Faculty of Science.

## Period of Registration

Degree	Duration (Years)	Extension (Years)
M.Phil.	Full time 02	Upto 04
	Part time 04	Upto 06
Ph.D.	Full time 03	Upto 06
	Part time 05	Upto 07

**N.B.** Employed applicants desirous full time study should submit a letter from the Head of the department that they have been released for full time research work.

**Full-time Students:** Any candidate who devotes the entire normal working hours to research towards the degree shall be considered a full-time research student. Such a student may undertake instruction work in the University with the permission of her/his supervisor and the Head of the relevant Department concerned for a maximum period of five (05) hours of lectures/tutorials and/or the academic laboratory work per week averaged over the academic year. A full-time student shall not work in any other Institution outside the University.

**Part-time Students:** Any candidate who does not fulfill the above conditions to qualify as a full-time student shall be considered a part-time student.

An extension of one year beyond the maximum period of study may be granted under special circumstances, on the recommendation of the Supervisor, Head of department and the Faculty Higher Degree Committee. With extensions in the case of special circumstances, the maximum duration for completion of Ph.D. Degree requirements is seven years and for M.Phil. Degree would be five years.

### **Renewal of Registration**

Applications for renewal of registration should be submitted to the Chairman of the Faculty Board of Science one month before the expiry date using the prescribed forms. A progress report duly signed by the candidate and the supervisor should be submitted along with the application.

A candidate who fails to renew registration before the expiry of three months from the due date, without a valid reason, will be deemed to have voluntarily withdrawn from the program.

### **Transfer of Registration**

- A candidate who has registered for the M.Phil. can be transferred to a Ph.D. degree programme with the prior approval of Faculty board of Science provided that he /she has basic qualifications needed to register for the Ph.D as determined by the faculty board of Science, University Higher Degree Committee and Senate.
- Applications for transfer of M.Phil. into Ph.D. should be submitted to the Chairman of the Faculty Board of Science and it shall be approved by the Senate on the recommendation of the Faculty Higher Degree Committee using the Annexure-II.
- A candidate who is registered for a Ph.D. degree may transfer to M.Phil. with the approval Faculty board of Science.
- On the written application of a candidate, he/she may be allowed to change over from Full-time registration to part -time registration of the Programme or vice-versa with the approval of Faculty board of Science. The period required for completing the remaining part of the programme shall be decided by the Faculty board of Science.
- A candidate wishing to change the registration from Ph.D to M.Phil. or vice versa after submission of the thesis on the recommendation of the Board of Examiners will be required to resubmit the thesis accordingly.



## **Cancellation of Registration**

The registration of a candidate may be cancelled on the recommendation of the Faculty Board of Science, due to the following reasons:

- a) The information provided by the candidate in the application form is found to be incorrect
- b) Exceeding the maximum duration of the period of study
- c) Non-payment of registration fees or other fees within the first three months of the year
- d) Non-submission of two consecutive progress reports
- e) Violation of rules and regulations of the Eastern University of Sri Lanka
- f) Unsatisfactory academic performance. In the event of the Board of Examiners deciding that the thesis submitted by the candidate does not meet the required standard, and that the thesis needs major revisions, and another viva voce examination has to be held, the total cost of re-examination has to be borne by the candidate.

## **Admission Requirements for M.Phil./Ph.D**

### **Master of Philosophy Admission Requirements**

An applicant fulfils the minimum eligibility requirements shall be admitted to the approved programme to the Degree of Master of Philosophy, if she/he has any one of the following qualifications;

- a) A Bachelor's Honours degree of SLQF Level 6 with a minimum of 30 credits in the relevant subject, or
- b) A Bachelor's Honours degree of Level 6 with a minimum of 30 credits in a related subject and successful completion of a qualifying examination or
- c) A Bachelor's degree of SLQF level 5 with a minimum GPA of 3 in the scale of 0-4 and successful completion of a qualifying examination which will be conducted after completion of 30 credits equivalent to SLQF 6 level in the same or related subject, or
- d) A qualification of SLQF level 7 or above in the relevant subject, or

- e) Completion of NVQ Level 7 with a minimum GPA of 3.0 in a scale of 0-4 and a qualifying examination equivalent to SLQF level 6 or 7, as determined by the academic authority of HEI, may also be considered for admission to SLQF level 11 in that subject of specialization.

### **Doctor of Philosophy Admission Requirements**

An applicant who fulfils the minimum eligibility requirements shall be admitted to the approved programme leading to the Degree of Doctor of Philosophy, if she/he has any one of the following qualifications;

- a) Master of Philosophy in the relevant subject, or
- b) Masters Degree in the relevant subject of a minimum duration of 20 months with a substantial research component with at least 60 credit units with not less than 15 credit units of research by way of thesis/dissertation in the relevant subject/discipline, or
- c) A Bachelor's Honours Degree of SLQF Level 6 with a minimum GPA of 3.0 at a scale of 0-4, with or without a qualifying examination as determined by the academic authority of HEI., or
- d) A holder of Bachelor's Degree Honours of Level 6 who has registered to follow a MPhil degree may be upgraded to PhD level after a minimum period of one year provided that his/her research competencies are of exceptional merit, or
- e) Bachelor's Degree of level 5 with a minimum GPA of 3 in the scale of 0-4 and successful completion of a qualifying examination which will be conducted after completion of 30 credits equivalent to SLQF level 6 in the same or related subject and register to follow an M.Phil. degree may be upgraded to PhD. level after a minimum period of one year provided that his/her research competencies are of exceptional merit.

## **Selection of Supervisors**

There shall be one or more supervisors, nominated by the Faculty Higher Degree Committee and approved by the senate on recommendation of the Faculty Board of Science.

- a) The candidate shall be required to make an oral presentation on the progress of her/his research every six months at a Seminar which will be evaluated by two evaluators one of whom shall be from outside the Faculty and after the synopsis presentation the title will be confirmed.
- b) Supervisors appointed for postgraduate student supervision have the appropriate skills and subject knowledge to support, encourage and monitor students effectively.
- c) Research for M.Phil./Ph.D. degree should be carried out under the guidance of a supervisor holding an equivalent or a higher qualification with the evidence of current research.
- d) Where required a co-supervisor may be appointed within the University or outside the University on the recommendation of the Supervisor.
- e) During the period of registration the candidate shall carry out the research under the guidance of the supervisor (s) appointed by the University.
- f) Any changes in the Supervisors shall be approved by the Senate on the recommendation of the Faculty Higher Degree Committee.
- f) Where a supervisor is unable to perform supervisory duties for a period of exceeding three months suitable alternative arrangements must be made with the approval of the Faculty Higher Degree Committee to meet the supervision needs of the student.
- g) Prompt action should be taken by the Faculty Board of Science if the supervisor-student relationship breaks down.

## **Progress Reports**

- a) Candidates are required to submit progress reports once in six months until the degree is completed to the faculty board of Science through the supervisor(s). The format of preparing this report is given as in the Annexure-IV.
- b) Supervisor should communicate to the students in writing when their progress is not satisfactory.
- c) Non-submission of progress reports within 03 months (grace period) could lead to the cancellation of registration of the candidate.

## **Submission of Thesis**

A thesis is the culmination of the candidate's research findings, submitted in written format.

- a) At the time of the thesis the candidates should be duly registered at the Faculty of Science.
- b) A minimum of five copies of the thesis temporarily bound should be submitted to SAR/ Academic Affairs department through the Supervisor and Head of the department, Dean/Faculty of Science for Examination.
- c) On successful completion of the examination, five copies of hard bound thesis should be submitted to SAR/Academic Affairs department through the Supervisor, Head of relevant department and Dean/Science. Where the examiners recommend corrections or modifications to the thesis, the internal supervisor should certify that such changes or modifications have been done in the resubmitted thesis under his/her supervision.

## **Examination of M.Phil./Ph.D.**

### **Appointment of Examiners**

- a) There shall be three examiners, nominated by the Head of the department with the consultation of the supervisor and approved by the Faculty Higher Degree Committee and senate on recommendation of the Faculty Board of Science.
  
- b) All candidates should have a minimum of two examiners out of 03. Two examiners will be selected by University Higher Degree and Senate.
  
- c) The examiners should possess qualifications as stipulated by the postgraduate By-law.
  
- d) The thesis shall be examined by two examiners at least one of whom shall be an examiner external to the place where the research work was carried out. In the case of Ph.D. theses, it is strongly recommended that at least one foreign examiner be appointed.
  
- e) The examiners are expected to evaluate the thesis and submit the evaluation report within a period of 3 months from the date of receipt of the thesis.
  
- f) Any changes in the Examiners shall be approved by the Senate on the recommendation of the Faculty Higher Degree Committee.

### **Examinations and Evaluation Procedures**

On submission of the thesis, and the receipt of the examiners' reports, the candidate will be called for an oral (Thesis Defense) examination (15-20 minutes presentation).

- a) The examination consists of the evaluation of the thesis and a Viva voce, conducted by the two appointed examiners.
  
- b) If one of the appointed examiners is unable to attend the viva voce, then the examination will be conducted by the other examiner who will be provided with the thesis evaluation report of the examiners who is unable to attend.

c) The Panel for Viva Voce examination shall include;

- i) Dean of the Faculty (Chairman)- (Where the Chairman of the Board of Examination is a supervisor, the Vice-Chancellor or his nominee shall be the Chairman)
- ii) Head of the relevant department (as observer/s)
- iii) Thesis Examiner/s
- iv) Supervisor/s (as observer/s)

d) If the thesis examiner/s is/are not available, the Faculty Higher Degree Committee and Senate shall nominate suitable person/s.

## **Results**

The final results will be released by the Faculty Results Board subject to confirmation by the Board of Examination of EUSL and the Senate of the Eastern University, Sri Lanka.

After the oral/written examination, the examiners may recommend any one of the following recommendation:

- a) Acceptance of the thesis as is
- b) Rejection of the thesis
- c) Require a revision/re-submission of the thesis

If the Panel of Examiners determines that the thesis submitted is acceptable with major corrections, then the candidate is required to resubmit the thesis to the SAR/ Academic Affairs department of the Eastern University, Sri Lanka with all the corrections being made.

When the thesis is accepted for the award of a degree, five (05) sewn and hardbound copies along with soft copy of the thesis conforming to the specified format as in the postgraduate prospectus of Academic Affairs department of the Eastern University, Sri Lanka shall be submitted to the University.

## **The Effective Date of the M.Phil./Ph.D. Degree**

The effective date of the award of the degree will be;

- i) without any corrections/Minor correction: the date of submission of the Thesis in a final bound form to the SAR/Academic Affairs department of the Eastern University, Sri Lanka.
- ii) with major corrections: The effective date shall be determined, after the evaluation of resubmitted thesis by the panel.

**APPLICATION FOR M.Phil./Ph.D.**

1. Tentative title:
2. Background (100-500 words):
3. Objectives:
4. Methodology:
5. Timeframe (Gantt chart):
6. Certificate of Ethical clearance, if applicable:
7. List of sources cited and bibliography:
8. Source of Funding:
9. Time required/availability of leave:

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Student's Name and Signature

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Supervisors' Names and Signatures

**Note:** The entire proposal should not exceed 1500 words.



**APPLICATION FOR UPGRADE FROM M.Phil. to Ph.D.**

*1. The supervisor's recommendation on*

- i. Research problem to be upgraded for Ph.D:
- ii. Student's potential to continue for a Ph.D:
- iii. Availability of facilities for future research:
- iv. Availability of funds for future research:
- v. Availability of leave
  - Letter from Head of department/Institution

*2. Student should provide*

- i. Copies of papers submitted to refereed journals from M.Phil.
- ii. Copies of abstracts published any symposium/conference from M.Phil.
- iii. Evidence that progress reports are submitted.
- iv. Evidence that supervision is available.
- v. Proposal indicating new changes for Ph.D submission (500-1000 words)
- vi. Any changes of tentative title anticipated.
- vii. Recommendation letter from the supervisor.

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Student's Name and Signature

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Supervisors' Names and Signatures

**APPLICATION FOR CHANGE OF TITLE OF THE THESIS**

**(To be sent at least 03 months before submission of thesis)**

1. Name of the Applicant:
2. Degree:
3. Registration Number:
4. Title:
5. Objectives:
6. New Title:
7. Any change in objectives:
8. Justification for change:

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Student's Name and Signature

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Supervisors' Names and Signatures

**APPLICATION FOR PROGRESS REPORT**

1. Title of the research project:
2. The date of first registration/extension of registration:
3. Name of candidate:
4. Name and addresses of supervisors:
5. Institute where research being carried out:
6. Time period covered by the report:
7. Brief description of research carried out during the reporting period:
8. Results / Observations /Outputs (summary)
9. Conclusion drawn:
10. Publications arising from the project during the reporting period (please attach copy):
11. Work plan for the next 6 months:
12. An explanation of any significant departure from the objective of your study:
13. Comments of the supervisor(s):
14. Date and Signature of the supervisors (internal):

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Supervisors' Names and Signatures

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Head of Department

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Dean/Faculty of Science

## **Application Procedure & Payment of Fees<sup>#</sup>**

Payment of application fees can be done at any branch of the People's Bank, to the specific Eastern University, Sri Lanka account:

The voucher from the bank certifying payment should be submitted to Faculty of Science with the completed admission form. The relevant department will notify you when you have been admitted to the course, so that you can register for it.

### **A. Application Fees**

	<b>Sri Lankans</b>	<b>Internationals</b>
M.Phil. Degrees	Rs. 1000.00	Rs. 1000.00
Ph.D. Degrees	Rs. 1500.00	Rs. 1500.00

### **B. Registration Fees for Sri Lankans**

#### **Doctor of Philosophy (Ph.D.) (Three year research degree)**

##### **First year**

Registration fee	=	Rs.10,000.00
Supervision fee/Teaching fee	=	Rs.15,000.00
Library fee (Non refundable)	=	Rs. 5,000.00
Library fee (Refundable)	=	Rs.10,000.00
Bench fee -minimum	=	Rs.15,000.00

**Total for First Registration** = **Rs.55, 000.00**

##### **From the second year onwards**

Registration fee (Annual)	=	Rs.10,000.00
Supervision fee /Teaching fee	=	Rs.15,000.00

**Total for Registration** = **Rs.25, 000.00** (Per each subsequent year)

Examination fee inclusive of  
payment to reviewers = **Rs. 30,000.00 + US \$ 440** (Foreign Examiner)

<sup>#</sup> Fees are subject to change at the discretion of the Council of the Eastern University, Sri Lanka.

### **Master of Philosophy (M.Phil.) (Two year research degree)**

#### **First year**

Registration fee	=	Rs.10,000.00
Supervision fee/Teaching fee	=	Rs.10,000.00
Library fee (Non refundable)	=	Rs. 5,000.00
Library fee (Refundable)	=	Rs.10,000.00
Bench fee -minimum	=	Rs.10,000.00
<b>Total for First Registration</b>	=	<b>Rs.45, 000.00</b>

#### **From the second year onwards**

Registration fee	=	Rs.10,000.00
Supervision fee /Teaching fee	=	Rs.10,000.00
<b>Total for Registration</b>	=	<b>Rs.20,000.00</b>

Examination fee inclusive of payment to reviewers	=	<b>Rs. 25,000.00 + US \$ 350</b> (Foreign Examiner)
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### **Fees payable by foreign students and Non-citizen of Sri Lanka**

#### **Doctor of Philosophy (Ph.D.) (Three year research degree)**

#### **First year**

Registration fee	=	USD \$ 1000
Supervision fee/Teaching fee	=	USD \$ 1000
Library fee (Non refundable)	=	Rs. 5,000.00
Library fee (Refundable)	=	Rs.10, 000.00
Bench fee -minimum	=	USD \$ 750

#### **From the second year onwards**

Registration fee (Annual)	=	USD \$ 1000(Per each subsequent year)
Supervision fee /Teaching fee	=	USD \$ 1000
Examination fee inclusive of payment to reviewers	=	<b>Rs. 30,000.00 + US \$ 440</b> (Foreign Examiner)

**NOTE:** In addition to the above fees, candidates are required to pay any other fees recommended by the relevant department of study, i. e. Bench fee, Laboratory fee, etc.

**Edited by: Dr. S. Arasaretnam, Dept of Chemistry, Faculty of Science, EUSL.**