



(A State University Accredited with 'A' Grade by NAAC)

## **M.Phil. Programmes**

**Prospectus — 2020 - 21**

(Information & Instructions to Candidates)

**CHANCELLOR** : **Hon'ble Thiru. BANWARILAL PUROHIT**  
**Governor of Tamil Nadu**

**PRO-CHANCELLOR** : **Thiru K.P. ANBALAGAN**  
**Hon'ble Minister for Higher Education**  
**Government of Tamil Nadu**

**VICE-CHANCELLOR** : **Prof. V. MURUGESAN, Ph.D.**

**REGISTRAR (i/c)** : **Dr. N. KRISHNAMOHAN**

**CONTROLLER OF EXAMINATIONS (i/c)** : **Dr. V. SELVANARAYANAN**

**DIRECTOR** : **Dr. V. VENKATESALU**  
**DIRECTORATE OF ACADEMIC RESEARCH (DARE)**



This brochure-cum-prospectus is published for enlightening those who intend to apply for admission to **Master of Philosophy (M.Phil.)**, at Annamalai University during 2020-2021.

The contents covered are subject to change from time to time and the University may make such changes without notice.

The University will provide additional information in response to enquiries from individuals and institutions.

### **AT A GLANCE**

#### **Admission to the Master of Philosophy for the Academic Year 2020-2021.**

#### **IMPORTANT DATES**

Online Registration Starts on	: <b>22.07.2020</b>
Last date of Closing Online Registration	: <b>31.08.2020</b>
Date of Entrance Test & Interview	: <b>will be intimated later</b>

Online Application Form along with Prospectus will be available at the University Website <http://annamalaiuniversity.ac.in/adm>

**Online Application Fee:- ₹ 1000/-**

For details, Please refer our University website  
[www.annamalaiuniversity.ac.in](http://www.annamalaiuniversity.ac.in)

**THE REGISTRAR**  
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Tamil Nadu, India

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## ANNAMALAI UNIVERSITY

In the early 1920s, to serve the downtrodden and to promote Tamil Literature, Rajah Sir S. R. M. Annamalai Chettiar founded Sri Minakshi College, Sri Minakshi Tamil College and Sri Minakshi Sanskrit College in a rural setup at Chidambaram. In 1928, Rajah Sir S. R. M. Annamalai Chettiar agreed with the local Government to handover the above said institution for establishing a University. Thus, on 01.01.1929 Annamalai University was established as per Annamalai University Act 1928 (Tamil Nadu Act 1 of 1929).

### **Annamalai University Act 2013**

The most significant development is the enactment of the Annamalai University Act, 2013 (Tamil Nadu Act 20 of 2013), which has come into force from September 25, 2013, after obtaining the assent of His Excellency, the President of India.

### **Accolades**

Annamalai University, accredited with 'A' Grade by **NAAC** in 2014, is one of India's largest public residential universities with 10 Faculties and 49 departments of study. Sprawling over 950 Acres of land, the University does yeoman service in taking education to the doorsteps of the people who are otherwise far from access to centres of higher learning. The University has initiated several innovative teaching programmes over the years and has been a pioneer in distance education.

"**The NIRF-2020**" by the Ministry of Human Resource Development (MHRD) has ranked the University in the band 101 - 150 in the University Category. In the Pharmacy Category the ranking is 12<sup>th</sup> in India. In the Medical Category the ranking is 35<sup>th</sup>.

"The **Times Higher Education World University Ranking - 2020**" has ranked Annamalai University in 1000+ for Overall category. In the Subject category Ranking, 2020, the University is ranked in the band of 501-600 for Life Sciences and 600+ for Pre-clinical, clinical & Health Subjects. 800+ in the Physical Sciences and Engineering subject.

"The **QS World University Ranking - 2020**" has ranked Annamalai University in the band of 291 - 300 in Asia Ranking, and 39 in India Ranking.

"The **CWTS Leiden Ranking 2019**", on scientific impact of universities and on universities' involvement in scientific collaboration & scientific performance, has ranked the University at 23<sup>rd</sup> based on the number of publications and 7<sup>th</sup> based on the proportion of publications that, compared with other publications in the same field and in the same year, belong to the top 10% most frequently cited.

“The **SCImago Institutional Ranking**” (2019) has ranked 9<sup>th</sup> in Tamil Nadu and 29<sup>th</sup> among the top 212 ranked institutions for Higher Education in India.

International Comparative Performance of India's Research Base (2009-14), a report published by Elsevier in April, 2016, prepared in collaboration with the Department of Science and Technology, Ministry of Science, Government of India has rated the University as the top Indian Institute in Pharmacology, 17<sup>th</sup> among the top 30 Indian Universities in Publications with highest subject area Publication Count in Pharmacology.

As far as the Global Exposure, Indian Science Ascending, a Springer Nature report, done in conjunction with Confederation of Indian Industries, has ranked the University as 11<sup>th</sup> among the top 20 Indian Institutions in International Collaborations.

The University has participated in the Southern (Antarctic) Ocean Expeditions (SOE) organized by National Centre for Antarctic Ocean Research 2011 - 12 onwards.

### **Research & Partnership**

Annamalai University has a commendable track record in projects and publications and has been awarded the PURSE Programme by the Department of Science and Technology. Ten departments are supported by UGC-SAP, Ten by DST-FIST and two departments have attained the status of Centre of Advanced Study. Annamalai University has joint research and innovation partnerships with 24 institutions across the USA, Europe, Australia, Japan, and the UK. The list of partners includes prestigious institutes like Karolinska Institute, John Hopkins University and University of Michigan amongst others.

Two of the most notable international collaborations in which Annamalai University is the Co-ordinating Institute include the Indo- EU FUNCFOOD Project and the 21<sup>st</sup> Century Indo-US Knowledge Initiative. There are several ongoing research projects with international foundations and industrial players like Bayer, CavinKare, Dow Agrosiences, Bill & Melinda Gates Foundation, HCL, L&T, Accenture, and Huawei.

### **MoUs & Patents**

To its credit, the University has obtained **15** Patents and has **40** MoUs with research partners like FAO, IRRI & USDA.

### **Institutional Social Responsibility Activities**

The ISR activities of the University include, Hospital on Wheels, Free Medical and Dental Camps in Villages, Lifestyle & Hygiene Awareness, Rural & Urban Health Centres through the Faculties of Medicine and Dentistry which are attached with a 1400 bedded hospital. The Faculty of Agriculture carries out extension activities like Agripreneurship Development Programme, Sustainable Livelihood Projects for Tsunami affected people and Training Farmers in Integrated Farming.

**Directorate of Academic Research (DARE)**

A separate Centre called **DIRECTORATE OF ACADEMIC RESEARCH (DARE)** was created and a Director has been appointed to look after the admission of Ph.D. and M.Phil. student's registration, constitution of Research Advisory Committee (RAC) for each Ph.D. student, monitoring the progress and quality of publication and minor problems faced by scholars, question paper setting, arrangement to conduct Ph.D. and M.Phil. course work Examinations, evaluation etc., This centre will also take care of expediting the process of thesis evaluation, conduct of Viva-Voce Examination and award of degree.

**Infrastructure Facilities**

The University has excellent infrastructural facilities including adequate classrooms, air conditioned high-tech seminar halls with interactive boards for classroom teaching, spacious examination and valuation centres, auditoria, well equipped research laboratories, and computer labs with internet facilities. The Central Instrumentation Laboratory has facilities for advanced research work. The General Library provides access to JSTOR for the Social Sciences and Science Direct and PROQUEST for the physical and natural sciences. The library staff also imparts training to students in the use of e-resources.

The campus has a Sports pavilion with gymnasium, 18 hostels, Internet browsing facility, canteens and waiting rooms for women. The University has a well-furnished and comfortable Guest House with a seminar hall. A 24×7 Hospital with 1400 beds, advanced equipment and facilities such as CT Scan, Trauma, ICU and emergency units caters the healthcare needs of students and faculty. The University has 24 hours uninterrupted power supply and additional generators in various faculties. The campus has its own water supply system, including reverse osmosis water plants.

The University has invested substantially over the last few years to improve the classroom and laboratory infrastructure, books and journals and online resources for teaching, learning and research. Recent additions to infrastructure include an Emergency Medicine Block, a 24x7 Pharmacy, a rapid access Cardiac Wing, hostel for international students, the Innovation Centre and four new canteens.

**Student Support Systems**

During their stay, students can avail of a number of support systems and services. The Information Desk in the Administrative Block provides necessary information for students on all aspects of campus life. The academic calendar and handbook give

information on the academic schedule and curriculum. All departments have associations under the auspices of which, students can interact with eminent academicians and scientists. Students can make use of both the Central and departmental libraries for reference work and computer and internet services for browsing. Coaching classes are organized to prepare students for NET, SET and civil services examinations. The Placement Cell arranges for campus recruitment. The scholarship section provides information on various financial support schemes. The Equal Opportunities Cell caters the welfare of SC/ST students, including dissemination of information about financial support and provision of scholarships for socio-economically weaker students.

Other support services include redressal of Students Grievances through SMS, in-house language laboratories, the Yoga Centre and Alumni Associations. Girl students can address their grievances to the Women's Grievance Cell. Students in need of counseling have access to professional counselors. Medical treatment in the University hospital is free for students. A medical insurance scheme has been introduced for the benefit of students. The Music College is a boon for music lovers and for those who aspire to learn music as a pastime. The Physical Education department with the gymnasium, impressive courts and tracks provide avenues for sports and games. Students trained by the Political Science Faculty regularly participate in Youth Parliament and have won prizes too. Students actively participate in extension activities through NCC, NSS and Youth Red Cross.



The University Library, named after the eminent scholar, statesman and former Vice-Chancellor, Dr. Sir C.P. Ramaswami Aiyar, serves as knowledge hub for the students and the staff. Quite a good number of journals can be accessed through the Infonet facility. Science-Direct and Proquest are subscribed for accessing e-journals.





The sports complex of the University, spread over several acres, houses facilities for sports and games. Tennis court complex, basketball complex, volleyball complex, athletic standard track, cricket field & nets, football field, hockey field and a wooden floored indoor stadium are a few worth mentioning.



## I. Research Facilities



**Instruments Laboratory**

**Biotech Laboratory**

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TRINOCULAR STEREOSCOPIC ZOOM MICROSCOPE



LEICA Stereo zoom microscope



Potter's tower



ROTARY VACUUMFLASH EVAPORATOR



BALL MILL

**Instruments at Faculty of Agriculture**



**Oral Pathology P.G. Lab**



**Atomic Force Microscope (AFM)**



**Scanning Electron Microscope - EDS**



**Single Crystal XRD (Bruker)**

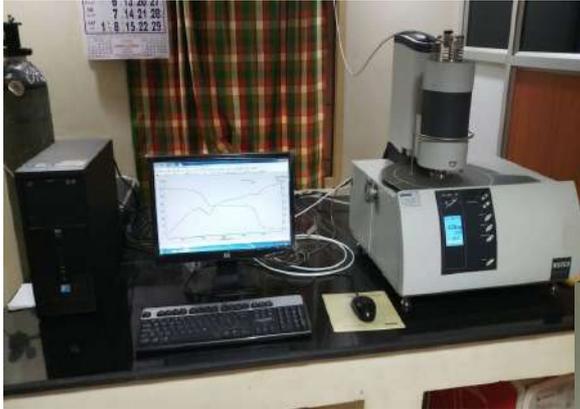


**Flow Cytometer Cell Sorter (FACS)**



**ICP**

x



**Simultaneous Thermal Analyser (STA)**

**Laser Scanning Confocal Microscope (LSCM)**



**Instruments Lab - Marine Sciences**



**Marine Museum**



**Instrumentation Lab**

## CHAPTER I ACT PROVISIONS

In accordance with the provisions of Section 31(b) of the Annamalai University Act 2013, the following Annamalai University Ordinance Governing the Award of the Degree of Master of Philosophy is prepared with the approval of the Syndicate.

## CHAPTER II REGULATIONS FOR MASTER OF PHILOSOPHY-2020

### DEFINITIONS AND NOMENCLATURE

In the Regulations, unless the context otherwise requires

- i. “University” means Annamalai University, Annamalainagar – 608 002.
- ii. “Departmental Research Committee” means the Committee duly constituted by the Vice-Chancellor of the University for effective coordination of the research activities of the department.
- iii. “Programme” means Pre-doctoral Programme leading to the award of M.Phil. degree.
- iv. “Supervisor” means any faculty member of the University who has been recognized by the University to supervise the M.Phil. scholars.
- v. “Head of the Department” means Head of the Department of the Supervisor.
- vi. “Place of Research” for the M.Phil. scholars shall be the Department where the supervisor is working.

### 1. PREAMBLE

The Master of Philosophy (M.Phil.) Degree is the Academic Degree which requires extended study and extensive intellectual effort. The Master of Philosophy (M.Phil.) Degree is awarded to a candidate who, as per these regulations, has undergone certain specific courses, and shall submit a dissertation on the basis of original research in any particular subject/discipline that makes a contribution to the advancement of knowledge, which is approved by the Board of Examiners as required. The M.Phil. Regulations-2020 of Annamalai University from the admission to the award of “Degree of Master of Philosophy” is based on the **UGC (Minimum Standards and Procedures for award of M.Phil. Degree) Regulations dated 5<sup>th</sup> May 2016.**

### 2. GENERAL ELIGIBILITY

- 2.1 Master’s Degree from UGC recognized University or any other qualification recognized as equivalent thereto in the fields of study notified from time to time by the University.
- 2.2 A minimum of 55% marks or CGPA 5.50 on a 10 point scale in the qualifying examination for Faculties of Arts, Science, Marine Sciences, Indian Languages, Education and Fine Arts. In the case of SC/ST/OBC (Non

Creamy Layer) / differently-abled candidate, 50% marks or CGPA of 5.0 on a 10 point scale in the Master's degree.

- 2.3 Candidates who have completed their Master's Degree under 11+1+3+2 (or) 10+2+3+2 (or) 10+2+5 pattern of programmes of study are eligible. Candidates who have passed Master's Degree through Open University system are not eligible.

### 3. DEPARTMENT OFFERING M.PHIL. DEGREE PROGRAMMES

Faculty	Departments /Disciplines
<b>Arts</b>	English, History, Political Science, Public Administration, Economics, Sociology, Social Work, Commerce, Population Studies, Business Administration, Rural Development, Library & Information Science and Philosophy.
<b>Science</b>	Mathematics, Statistics, Physics, Chemistry, Botany, Plant Biology & Plant Biotechnology, Zoology, Microbiology, Environmental Biotechnology, Bioinformatics, Geology, Applied Geology, Geoinformatics, Biochemistry, Biotechnology, Computer Science, and Computer Applications.
<b>Marine Sciences</b>	Marine Biology & Oceanography, Coastal Aquaculture, Marine Biotechnology, Marine Microbiology, Marine Food Technology, and Ocean Science & Technology.
<b>Indian Languages</b>	Tamil, Hindi, and Linguistics.
<b>Education</b>	Education, Psychology, Physical Education, and Yoga.
<b>Fine Arts</b>	Music

### 4. MODE OF SELECTION AND ADMISSION

- 4.1 University shall issue notification for M.Phil. admission every year in the month of May / June.
- 4.2 The candidates desirous of registering for M.Phil. Programme shall apply by filling all the relevant details mentioned in the online application form available in the University website and submit the completed online application before the due date as indicated in the notification issued from time to time.
- 4.3 Incomplete applications and applications with false information in any respect shall be summarily rejected without any intimation to the candidate.
- 4.4 The department of study concerned shall screen the applications as per the eligibility norms and the respective department shall conduct the written test cum interview only for eligible candidates.
- 4.5 The admission of M.Phil. students shall be based on the following admission criteria besides General Eligibility requirements.
- i. An entrance test at Post-Graduate level for 70 marks [70 multiple choice questions (MCQs), each question carrying one mark and the

duration of the test is 90 minutes] followed by an interview that will have a weightage of 30 marks.

- ii. The candidates who secure 50% marks in the entrance test and interview put together are eligible for admission.
- iii. A relaxation of 5% marks (from 50% to 45%) shall be allowed for the candidates belonging to SC/ST/OBC (Non-Creamy layer)/Differently abled category.
- iv. UGC-JRF/NET/SLET/SET/GATE/CSIR/ICHR/ICPR/ICSSR qualified candidates are exempted from the Entrance test but they have to appear for the interview.

- 4.6 The following is the constitution of the Departmental Research Committee (DRC). The members other than Head of the department and the co-ordinator of DDE shall serve only for one academic year.

<b>Designation</b>	<b>Members</b>
The Head of the Department	Convener
The respective Coordinator of DDE, if exists	Member
Two Professors/Senior Faculty members nominated by the Vice-Chancellor (in rotation)	Members
One Associate Professor (in rotation)	Member
One Assistant Professor (in rotation)	Member

- 4.7 The DRC will have the following functions:
- ✓ Selection of candidates for admission to the M.Phil. Programme.
  - ✓ Allotment of Supervisors to the students enrolled for the M.Phil. Programme.
  - ✓ Facilitating research facilities in the Department.
  - ✓ Framing the syllabus for course work.
  - ✓ Maintenance of research quality and quality publications.
  - ✓ Sorting out any other research related issues of the department.
- 4.8 If there is any dispute either in the constitution or functioning of the DRC, it shall be brought to the notice of the Director-DARE and the decision of the Vice-Chancellor shall be final.
- 4.9 The minutes of the DRC together with the recommendations of the Dean of the respective faculty will be placed before the Vice-chancellor for approval of the list of candidates selected for the M.Phil. Programme and supervisors.
- 4.10 The selected candidates shall be issued admission cards and they will be admitted to M.Phil. Programme in the respective department based on his/her PG qualification. The candidates should join before the last date mentioned in the admission card.
- 4.11 The scholar, supervisor and examiners shall not be relatives to one another.
- 4.12 This University does not offer M.Phil. Programme under Distance Education mode.

#### 4.13 Admission of Foreign Students

Foreign students who are selected under various scholarship schemes, either by the Ministry of Education and Culture or the Ministry of External Affairs, will be given admission on the recommendations/sponsorship of the respective Ministry of Government of India. The other foreign students who seek admission should possess a Research VISA issued by the Indian Embassies abroad and produce a “No Objection Certificate” from the Ministry of Human Resource Development, Government of India, after clearance from the Ministry of External Affairs. They should also show proof for financial capability for staying/pursuing M.Phil. Programme.

### 5. TUTION FEES & OTHER FEES

#### 5.1 Tuition Fee

The selected candidates shall pay the prescribed fees before the last date mentioned in the admission card, failing which they will forfeit the seats.

Sl. No.	Faculty / Department / Discipline	Tuition Fee (₹)
1.	Arts, Indian Languages, Music, and Yoga	22,110/-
2.	Mathematics	22,510/-
3.	Statistics, Education, Psychology, Physical Education	26,510/-
4.	Physics, Botany, Plant Biology & Plant Biotechnology, Zoology, Environmental Biotechnology, Geology, Applied Geology, and Geoinformatics	38,060/-
5.	Microbiology	34,060/-
6.	Chemistry, Biochemistry, Biotechnology, Marine Biology & Oceanography, Coastal Aquaculture, Marine Microbiology, Marine Biotechnology, Marine Food Technology, Ocean Science & Technology, and Bioinformatics	48,060/-

#### 5.2 Hostel Fee

Annamalai University is a residential University. Adequate Hostel accommodation is available. Candidates are advised to stay in the Hostel. The room rent and establishment charges are as given below:

Programme	Name of the Hostel	Fee per Annum
M.Phil.(Boys)	Pothigai Illam	Rs. 50,000/-*
M.Phil.(Girls)	Thamarai Illam	Rs. 24,000/-# (for SC/ST students)

\* Inclusive of Admission fees, Establishments, Room Rent, Electrical, Mess charges and Misc. Charges.

# This fee has to be paid by the students at the time of joining the hostel and would exclusively cover the Admission fees, Establishment, Room rent, Electrical and Misc. Charges only - except Mess charges (Lumpsum Mess charges of ₹ 22,000/- will be adjusted from their Scholarship amount).

### 5.3 Scholarship

The students of Annamalai University can avail the Government Scholarships subject to eligibility.

1. UGC: Rajiv Gandhi National Fellowship (RGNF) for SC/ST students doing Research work for the award of M.Phil.
2. UGC-NET-JRF.
3. UGC-BSR Research Fellowship in Sciences for meritorious students in the various faculties (applicable to all Department of Sciences, Agricultural Sciences, Engineering Sciences).
4. Indian Council of Medical Research (ICMR), Indian Council of Social Science Research (ICSSR), Council of Scientific and Industrial Research (CSIR) Fellowships, New Delhi.
5. DST-Inspire Programme – Ministry of Science and Technology, New Delhi.
6. Fellowship / Scholarship sanctioned by various Funding Agencies.
  - a. UGC Scheme for award of Post Graduate Scholarship for professional programmes for SC/ST candidates.
  - b. Post Graduate Indira Gandhi Scholarship for single girl Child: This is only for the Candidate who happens to be single Girl child of the family (having no brother or sister) and who has taken admission in regular full time Master's Degree Programmes in recognised University or a Post Graduate College in conventional basic subject.
  - c. **Note:** This advertisement of the above Research Schemes will be published in all leading news papers and the Guidelines are available on the respective Website of the funding agencies.
7. Post Matric Scholarship will be awarded to the students studying M.Phil. Degree Programmes including self-supporting programmes who belong to SC/ST community and also converted students whose parents/ guardians annual income from all sources does not exceed from Rs. 2,50,000/-.

#### **Scholarships Sanctioned By the Government of Tamil Nadu**

8. SC/ST Communities and Converted Christian Students (converted from SC/ST) whose Parent's/Guardian's income from all sources should not exceed Rs. 2,50,000/-.
9. Other State Scholarship:
  - a. Other State Scholarships for SC/ST/BC/OBC/EBC students.
  - b. "ISHAN UDAY" Scholarship for North Eastern Region Students.
10. Minority Scholarship: Minority Scholarship award on the basis of merit cum means for minority community students.

11. Higher Education Special Scholarship: In addition to the Post Matric Scholarship, Higher Education Special Scholarship is awarded to the hostel students belonging to SC/ST and Converted Christian community and the number of scholarship is limited by the Government. The Annual income from all sources should not exceed Rs. 2,50,000/- per annum.
12. BC/MBC/DNC Scholarship: The Scholarship will be awarded to the Students belonging to BC/MBC/DNC communities whose Parent's/ Guardian's income from all sources should not exceed Rs. 2,00,000/- per annum.

**Note:** For all Scholarship, Income Certificate taken after April 2020 should be produced.

## 6. PROGRAMME STRUCTURE

### Course Work

- 6.1 All M.Phil. Scholars shall undergo 3 courses of 6 credits each spread over in two semesters.
- Course – I : Research Methodology :  
Common to all the M.Phil. Scholars in the Department.
- Course – II : Core Course :  
Common to all the M.Phil. Scholars in the Department.
- Course – III : Field of Specialization.
- 6.2 The syllabus for the M.Phil. course work shall be approved by the Board of Studies of the respective department.
- 6.3 Examination for Courses I and II will be held at the end of the first semester and the examination for Course III will be held at the end of the second semester.
- 6.4 M.Phil. Scholars will sign the attendance register maintained in the Department on all working days. He/She is expected to earn a minimum of 80% attendance to write the course work examination, failing which he/she will not be permitted to appear for the examination.
- 6.5 A candidate will not be permitted to appear for the written examination more than two occasions. If a candidate fails in any course after two appearances, he/she will not be entitled to submit his/her dissertation. The candidate has to rejoin the programme as fresh student.
- 6.6 In addition to the course work, each M.Phil. scholar shall undertake original research in the chosen subject/discipline/specialization that contributes to the advancement of knowledge. He/She should submit a dissertation based on his/her research work. The candidates shall do research work in the University campus only.
- 6.7 On receipt of Report, the M.Phil. scholar should undergo a public Viva-voce examination.
- 6.8 The Head of the Department shall function as the Chairperson of the M.Phil. Programme.

**7. NUMBER OF SCHOLARS**

A Professor who is a recognized Supervisor shall supervise only a maximum of **3** M.Phil. Scholars at any time. An Associate Professor who is a recognized Supervisor shall supervise only a maximum of **2** M.Phil. Scholars and an Assistant Professor who is a recognized supervisor shall supervise only a maximum of **1** M.Phil. Scholar at any time.

**8. DURATION OF THE PROGRAMME**

M.Phil. programme is of one year duration spread over two semesters. The prescribed course work including M.Phil. dissertation shall be completed within a maximum period of two years.

**9. EXTENSION OF DURATION**

- 9.1 Due to valid reasons, if a candidate is not able to submit the dissertation within two years, a maximum of one year will be permitted by the Vice-Chancellor, if the request is genuine and the candidate is willing to pay the extension fees for the third year.
- 9.2 Women candidates (who availed maternity leave) and persons with disability (more than 40% disability) are allowed to submit the thesis with a relaxation of maximum six months i.e., upto 2 years and 6 months.

**10. SUBMISSION OF DISSERTATION**

- 10.1 The candidate shall be permitted to submit his/her M.Phil. Dissertation after completion of one year from the date of joining the programme, and after having been declared to have passed all the three courses.
- 10.2 Dissertation shall be prepared in accordance with the prescribed format and specification (Annexure-1). Three copies of the dissertation along with proforma for submission of dissertation (Annexure-2) and no dues certificate (Annexure-3) shall be submitted after completion of the stipulated period. The Supervisor shall forward the dissertation copies with panel of examiners to the Director, DARE through Head of the Department and the Dean concerned.
- 10.3 The dissertation shall contain a certificate from the research supervisor (Annexure-4) specifying that the dissertation submitted is a record of research work done by the candidate during the period of study under him/her, and that the dissertation has not previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or similar title.
- 10.4 The dissertation shall also contain a declaration by the candidate (Annexure-5) that the work reported in the dissertation has been carried out by the candidate himself/herself and that the material from other sources, if any, is duly acknowledged and no part of the dissertation is plagiarized.
- 10.5 The dissertation of language subjects will be in the respective language. However, the title and the certificates shall be given in English.
- 10.6 The M.Phil. dissertation will be evaluated by one External Examiner chosen from the panel submitted.

- 10.7 The External Examiner shall evaluate the dissertation and award marks. He/She shall also send a report on the merit of the dissertation in the proforma provided by the Director – DARE and a list of questions to be asked during the Viva-voce examination.
- 10.8 On receipt of the evaluation report of the acceptability of the dissertation from the External Examiner, a public Viva-voce examination will be conducted by the Head of the Department and the Research Supervisor
- 10.9 If the Head of the Department happens to be the Supervisor, one of the senior faculty members in the department shall be appointed as Internal Examiner.
- 10.10 The Viva-Voce examination shall be held only on working days.
- 10.11 The M.Phil. scholar shall be asked to make a presentation before the audience and answer the questions raised by the examiner and the audience. The purpose of the Viva-voce is to test the understanding of the student on the subject matter of the dissertation and the competency in the general field of study.
- 10.12 The Viva-voce examination shall be held with all seriousness befitting the solemnity of an examination and no attempt shall be made to treat it as a mere formality.
- 10.13 After the Viva-voce examination, the Chairman shall send the Minutes together with the marks awarded for the Viva-voce examination to the Director - DARE through proper channel.

#### **11. AWARD OF M.PHIL. DEGREE**

- 11.1 After the completion of evaluation of dissertation and Viva-voce examination, prior to the actual award of the degree in the Convocation, Provisional Certificate shall be issued on written request by the M.Phil. scholar to the Director, DARE, through the Supervisor and the Head of the Department along with the Viva Completion Certificate and requisite fees.
- 11.2 The M.Phil. Degree Certificate shall contain the name of the scholar, photo of the scholar and also the title of the thesis along with the name(s) of the Faculty/Faculties and discipline(s). Further, the degree certificate shall also contain the statement that the degree is awarded in compliance with the University Grants Commission Regulations – 2016.

#### **12. ETHICAL & LEGAL REQUIREMENTS**

- 12.1 All research involving use of all data and material relating to human subjects as well as laboratory animals must be approved by the appropriate Ethical Committee constituted by the University. In practice this means that no research in this line can be undertaken until all the required approvals and authorisations have been given from the appropriate ethical committees.
- 12.2 It is the responsibility of the Research Supervisor and the Research Scholar to obtain approval from the relevant committee before initiating the research work.

- 12.3 The Research Supervisors and Scholars shall follow the regulations stipulated by appropriate bodies for undertaking research. Annamalai University has constituted Institutional Committees to scrutinize and approve research proposals.
- 12.4 Institutional Psychology Research Ethics Committee (IPREC) for research in Psychology and Institutional Humanities and Social Sciences Research Committee (IHSSRC) for research in Arts, Humanities and Social Sciences or cognate areas shall scrutinize research proposals to ensure that the dignity, human rights, health, safety and privacy of research participants are protected, that valid consent has been obtained and that the information gained by the research is not outweighed by any costs to the subject in time, effort, discomfort or potential risk. These Committees will also explore potential ethical issues that may arise as a result of the proposed research work
- 12.5 Institutional Technology Ethics Committee (ITEC) will address ethical issues specific to new and emerging technologies in terms of impact on the environment and human well-being
- 12.6 **Regulations for Studies on Plants:** All research work carried out on transgenic plants shall follow the guidelines laid down by the Department of Biotechnology ([http://dbtindia.nic.in/guidelines\\_98.pdf](http://dbtindia.nic.in/guidelines_98.pdf)).
- 12.7 **Regulations for Field work:** Permission for field work shall be obtained from the appropriate Departments of Forests, Fisheries, National Biodiversity Authority, Wildlife, etc.
- 12.8 **Regulations for Studies on Laboratory Animals:** The Institutional Animal Ethics Committee (IAEC) shall examine proposals involving research on laboratory animals.
- a. The proposals shall be submitted to the IAEC for evaluation and approval in the prescribed format <http://envfor.nic.in/division/committee-purpose-control-and-supervision-experiments-animals-cpcsea-1#RF>.
  - b. The conduct of animal studies shall follow the rules for Good Laboratory Practice established by the Committee for the Purpose of Control and Supervision on Experiments on Animals (CPCSEA) under the guidance of an authorized Veterinarian.
- 12.9 **Regulations for Biosafety:** Biosafety rules encompass manufacture, import, export, and storage of micro-organisms, Genetically Modified Organisms (GMOs), and Gene-technology products as supplemented by the Biotechnology Safety Guidelines issued by the Department of Biotechnology (DBT).
- 12.10 **Regulations for Human Sampling:** The Institutional Human Ethics Committee (IHEC) will scrutinize the use of human volunteers and clinical samples for research. Sampling of human tissue and biological fluids shall conform to the ethical guidelines for biomedical research on human participants issued

by the Indian Council of Medical Research, New Delhi (<http://www.icmr.nic.in/ethical.pdf>) (2006). With the burgeoning biomedical and pharmaceutical industry, there is a growing interest in obtaining human tissues for research, validation and commercial purposes. Researchers must be aware of the ethical and legal issues involved in using human tissues and comply with the Human Tissue Act (2004) and consent must be obtained.

- 12.11 Where research is being conducted in collaboration with another institution outside the University, the ethics policies of those institutions should be appended to any proposals to be considered by the Research Ethics Committee of this University, provided the experiments are carried out in this University. If the experiments are carried out in the collaborating institution, the procedure may be reversed.

### **13. RESEARCH ETHICS**

Annamalai University is committed to undertake research with impeccable scientific integrity and in conformity with the accepted code of conduct on Good Research Practices (GRP). GRP is concerned with the organizational process and the conditions under which academic research is planned, performed, monitored, recorded, archived and reported. This requires appropriate training and supervision to ensure the highest achievable standards for conducting research. All Research Scholars and Supervisors shall follow these guidelines while planning and executing research.

#### **13.1 Scientific Integrity**

All researchers shall maintain a very high degree of integrity with respect to all aspects of research including application for funding, designing and conducting experiments, analysing data, interpretation of results and publication of results.

#### **13.2 Ethical and Legal Requirements:**

All researchers must be aware of and comply, with the ethical and legal requirements relating to human participants, animals disclosures of personal information, biological material transfer and testing, and biodiversity protection before undertaking research. All researchers are expected to follow the standard procedures for conducting research laid down by relevant scientific and professional bodies.

#### **13.3 Conflict of Interest**

A conflicting interest exists when professional judgement concerning a primary interest such as scientific knowledge may be influenced by a secondary interest such as financial gain, personal advancement or personal rivalry. Conflicts of interests may influence interpretation of results. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. All conflicts of interest, perceived, potential or actual, must be declared.

**13.4 Safety**

A researcher must be aware of the safety precautions and potential hazards of materials and equipment, use, storage and disposal of chemicals, how to deal with spills and accidents and requirement for vaccinations when dealing with biological samples. Equipment used to generate data should be calibrated and serviced regularly to ensure optimal and reproducible performance. A Standard Operating Procedure (SOP) and easily accessible instructions for safe shutdown in case of emergency should be maintained for each equipment.

**13.5 Economy**

All researchers shall exercise the principle of economy in the use of resources including infrastructure facilities, equipment and consumables. Regular review meetings shall be conducted by the Research Advisory Committee to assess the progress of research and to decide stop further experiments.

**13.6 Documentation of Data**

All data must be recorded promptly, accurately, legibly, indestructibly, and signed and dated by the research scholar and countersigned by the supervisor. Confidentiality is important for data publication and protecting intellectual property.

All raw data, documents, protocols, specimens and reports shall be retained and archived by the research supervisor. Data must be retained intact for a period of at least 7 years from the date of any publication. Proper documentation of data will help in establishing ownership rights, and provide proof against charges of cheating or falsification.

**13.7 Publication**

Annamalai University encourages researchers to publish research data while emphasizing the paramount importance of quality over quantity. All researchers shall refrain from “fudging” and fabricating data. If an error is detected after publication, the corresponding author shall request the journal to publish an erratum. If there are concerns and serious doubts about the authenticity of the data, the authors shall retract the paper from the journal. Any deviation from GRP and indulgence in research misconduct will be dealt with severely as detailed in the ensuing section.

**13.8 Dissemination**

Results that are published may be disseminated, provided there is no infringement on any Intellectual Property Rights (IPR). However, researchers must exercise utmost caution in discussing work that is incomplete, unpublished, or pending patent application.

**14. RESEARCH MISCONDUCT**

14.1 Annamalai University policy on defining and dealing with research misconduct adheres to national and international conventions on the issue and the policy statement issued by the Govt. of India on addressing situations related to national integrity, which is the foundation of research.

- 14.2 Research or scientific misconduct is defined as fabrication, falsification and plagiarism, self-plagiarism, or deception in proposing, carrying out or reporting research results. However, honest error or differences of opinion cannot be classified as research misconduct.
- 14.2.1 Fabrication involves making up results and publishing them. A minor form of fabrication is where references are included to give arguments the appearance of widespread acceptance, but are actually fake, and/or do not support the argument.
- 14.2.2 Falsification refers to manipulation of research materials, equipment, or processes or changing or omitting data or results such that the research is not accurately represented in the research record.
- 14.2.3 Plagiarism involves the appropriation of another person's ideas, processes, results, or words without giving appropriate credit. Plagiarism also includes deliberate failure to appropriately credit prior work by others thereby giving a false impression of priority (citation plagiarism). Self-plagiarism is also considered as scientific misconduct.
- 14.2.4 Ghost-writing, the practice of commissioning an anonymous writer is also regarded as a form of plagiarism, because it undermines the integrity of scientific publication system.
- 14.2.5 **Unacceptable Authorship:**  
Guest authorship refers to granting authorship out of respect for an individual, or because it will increase the likelihood of publication, credibility, or status of the work.  
Gift authorship is credit offered from a sense of obligation, or anticipated benefit, to an individual who has not contributed to the work. Ghost authorship is denying authorship to an individual who has made substantial contributions to the research or writing of a manuscript.
- 14.2.6 Violation of ethical standards in human and animal experiments.
- 14.2.7 Suppression or failure to publish findings adverse to the researcher's interests.
- 14.2.8 Failure to follow established protocols if this failure results in unreasonable risk or harm to humans or the environment and facilitating of misconduct in research by collusion in, or concealment of, such actions by others
- 14.2.9 Intentional, unauthorized use, disclosure or removal of, or damage to, research-related property of another, including apparatus, materials, writings, data, hardware or software or any other substance or device used in or produced by the conduct of research.

## **15. INVESTIGATION OF RESEARCH MISCONDUCT**

- 15.1 A committee duly constituted by the University will investigate the complaints of alleged research misconduct by the research scholars and/or supervisors.

- 15.2 The following is the composition of the committee to investigate the complaints of alleged research misconduct by the M.Phil. scholars and/or supervisors:

<b>Designation</b>	<b>Members</b>
The Director, DARE	Convener
The Dean of the Faculty concerned	Member
Head of the Department or a senior Professor in the Department	Member
Head of the Department from the faculty concerned (other than the scholar department) (nominated by the Vice-Chancellor)	Member
One Lady Faculty member (nominated by the Vice-chancellor)	Member

- 15.3 Confidentiality will be maintained during the investigation including the identity of the individual registering the complaint (complainant).
- 15.4 If the misconduct is unintended, due to an error in interpretation, or the charges are baseless, the complaint will be dismissed. However, a report will be filed in the office.
- 15.5 If the complaint is credible, the committee, after informing the M.Phil. scholar and Research Supervisor against whom the complaint has been made (the subjects), will assess the authenticity of the charge, and the nature of the misconduct based on the material evidence available.
- 15.6 The person (scholar/supervisor) will be allowed to defend himself/herself. However, he/she shall provide the Committee access to reports, raw data, electronic records, manuscripts and any other material relevant to the investigation.
- 15.7 The Committee shall complete its investigation and submit its report on the recommended course of action within a period of thirty days.
- 15.8 Annamalai University regards research misconduct as a serious offence and any member of staff/students may raise bonafide concerns confidentially and without fear of suffering a detriment. However, if the allegations prove to be made frivolous or with malicious intent, formal action against the complainant will be initiated.
- 15.9 If the charges of misconduct are proved, the subject(s) will be notified and disciplinary action initiated.

### **CHAPTER III TRANSITORY PROVISIONS**

#### **16. AMENDMENTS TO THE ORDINANCE**

This ordinance is subject to modifications or amendments as and when situation warrants from time to time by the Syndicate, based on the recommendations of the Academic council.

#### **17. INTERPRETATION OF THE ORDINANCE**

If any dispute arises in the interpretation of the ordinance, the decision of the syndicate shall be final.

# **ANNEXURES**

**A typical Specimen of Cover page and Title Page**

<Font style Times New Roman>

**THE HALL EFFECTS ON MHD FLOW**

<Font Size 18><1.5 line spacing>

**A THESIS** <Font Size 14>

*Submitted by* <Font Size 14><Italic>

**GOVINDARAJAN K R** <Font Size 16>

*in partial fulfillment of the requirements for the award of the degree of*

<Font Size 14><Italic><1.5 line spacing>

**MASTER OF PHILOSOPHY** <Font size 16>



**DEPARTMENT OF MATHEMATICS**

**ANNAMALAI UNIVERSITY**

**ANNAMALAINAGAR 608 002** <Font Size 16><1.5 linespacing>

**APRIL 2020** <Font Size 14>

# **THE HALL EFFECTS ON MHD FLOW**

**A THESIS**

*Submitted by*

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**ANNAMALAI UNIVERSITY**

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**APRIL 2020**



**DIRECTORATE OF ACADEMIC RESEARCH  
(DARE)  
ANNAMALAI UNIVERSITY  
ANNAMALAINAGAR 608002**



**PROFORMA FOR SUBMISSION OF M.Phil. DISSERTATION**

**I. Registration Details:**

Name of the M.Phil. Scholar: Contact No: Email ID:		Roll No:	
Name of the Supervisor: Contact No : Email ID :			
Month and Year of Registration			
Date of completion of minimum period		Date of completion of Maximum period	
Extension of period approved (mention date)	upto:	Date of submission of dissertation	

**II. Extension of time for submission of Dissertation after two years:**

Late fee details:

Amount (Rs.)	D.D. No.	D.D. Date	Name of the Bank	Branch

**III. Whether No Dues Certificate is enclosed:**

Certified that the information furnished above is true and correct to the best of my knowledge.

**Signature of the M.Phil.  
Scholar**

**Signature of the Supervisor**  
(Name with Seal)

**Signature of  
Head of the Department**  
(Name with Seal)

(For Office use only) Checked and Accepted

**Dealing Head**



**DIRECTORATE OF ACADEMIC RESEARCH  
ANNAMALAI UNIVERSITY  
ANNAMALAINAGAR 608002**



**NO DUES CERTIFICATE  
(To be submitted along with Dissertation to the Director - DARE  
Annamalai University, Annamalainagar)**

Name of the M.Phil.Scholar	:		
Programme	:	M.Phil.	
Roll No.	:		
Department and Faculty	:		
Month & Year of Submission of Thesis	:		
<b>Sl. No.</b>	<b>Details</b>	<b>No Dues Certificate</b>	<b>Signature (Name with Seal)</b>
1.	University Library		
2.	Department Library		
3.	D1- Section		
4.	Department of the Supervisor and M.Phil. Scholar		
5.	Department Store		
6.	Hostel Office		
7.	Project Section (if applicable)		
8.	Scholarship Section (if applicable)		

\* **Strike off whichever is not applicable**

**Declaration**

I hereby declare that in the event of any due from me found at a later date, I shall refund the same to the Institution.

**Signature of the M.Phil. Scholar**

**Signature of the Supervisor**  
(Name with Seal)

**Signature of  
Head of the Department**  
(Name with Seal)

**ANNAMALAI**  **UNIVERSITY**  
**Annamalainagar 608 002**

**NAME OF THE SUPERVISOR** :  
 Designation :  
 Department of Faculty of :

**CERTIFICATE**

This is to certify that the dissertation entitled  
 “.....” is a bonafide record of research work  
 done by **Mr./Ms. xxxxxxxxxxxxxxxxx**, M.Phil. Scholar, Department of.....,  
 Annamalai University, Annamalainagar, under my guidance during the period  
 .....to ..... and that this dissertation has not previously formed the basis for  
 the award of any Degree, Diploma, Associateship, Fellowship or other similar  
 title to this candidate or any other candidate.

This is also to certify that the dissertation represents the independent  
 work of the candidate.

Signature of the Supervisor

Station:

Date:



**DECLARATION BY CANDIDATE WHILE SUBMITTING DISSERTATION**  
**DECLARATION**

I, \_\_\_\_\_ M.Phil. Scholar in the Department of \_\_\_\_\_ declare that the work embodied in this M.Phil. dissertation entitled \_\_\_\_\_ is a result of my own bonafide work carried out with my personal effort and submitted by me under the supervision of \_\_\_\_\_ at Annamalai University, Annamalainagar. The contents of this dissertation have not formed the basis for the award of any Degree/ Diploma/ Fellowship/ Titles in this University or any other University or similar Institution of Higher Learning.

I declare that I have faithfully acknowledged and given credit and referred to the researchers wherever their works have been cited in the body of the thesis. I further declare that I have not willfully copied some others' data/ work/ results, etc. reported in the Journals, Magazines, Books, Reports, Dissertations, Theses, Internet, etc. and claimed as my own work.

Date:

Signature of the Candidate

## **INSTRUCTIONS FOR FILLING IN THE APPLICATION**

### **Application**

The registration of application is only in online mode.

University website: [**[www.annamalaiuniversity.ac.in/adm](http://www.annamalaiuniversity.ac.in/adm)**]

## **PROCEDURE FOR REGISTRATION OF ONLINE APPLICATION**

### **General Instructions for Applicants**

- i. Online Application Number is the Registration Number of the Annamalai University M.Phil. Admissions, 2020.
- ii. The candidates seeking admission should Register and apply only through online by logging on to **[www.annamalaiuniversity.ac.in/adm](http://www.annamalaiuniversity.ac.in/adm)**
- iii. The guidelines for registration are available on the Annamalai University Website Portal.
- iv. The candidates are directed to upload the photo copy of the following certificates along with the online application:

P.G. Provisional or Degree Certificate

### **No need to send the hard copy of the application**

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**At the time of interview**, the candidates are directed to produce all the following certificates in original for verification. The candidates are also directed to submit hard copy of the application along with the photocopy of the following certificates.

1. S.S.L.C Marksheet
2. H.Sc. Marksheet
3. U.G. Marksheet & Degree Certificate
4. P.G. Marksheet & Degree Certificate
5. Transfer Certificate.