# **About the Central University of Kerala**

The Central University of Kerala, Kasaragod, came into being in 2009 under the Central Universities Act 2009 (Parliament Act No. 25 of 2009). The University is founded on the noble vision of a 'caring wisdom' and is guided by the lofty ideals of academic and social commitment, moral steadfastness and intellectual and spiritual enlightenment, as reflected in its vision statement. Located in a region characterized by linguistic and ethnic diversity and cultural richness, the University seeks to harness the local resources – human, intellectual, social, artistic and cultural – while bringing in the best that is globally available, thus maintaining a fruitful, symbiotic relationship with a region that badly needs an educational uplift. The Central University of Kerala (CUK) is ranked among the top 150 premier educational Institutions across India, as per the National Institutional Ranking Framework (NIRF 2019 survey).

# **About the Department of Computer Science**

The Department of Computer Science started functioning in August 2011. The Department offers MSc Computer Science with a specialization in Intelligent Systems. The courses are designed with the objective of equipping the students for the IT industry and for streamlining them for taking up research in Intelligent Systems. The Department is recently equipped with Param Shavak (a mini Super Computer Center). The Department also offers a Ph.D program in Computer Science. Since its inception, the Department has been organizing a host of curricular and co-curricular activities aiming at the academic enrichment of students and faculty.

### **Patrons**

Prof. Dr. G. Gopa kumar, Vice Chancellor Prof. Dr. K. Jayaprasad, Pro-Vice Chancellor

## Chair

Prof. Dr. M. R. Prathapachandra Kurup Dean, School of Physical Science

# **Coordinator/Organizing Secretary**

Dr. Rajesh R

Assoc. Prof. and Head, Dept. of Computer Science

# **Organizing Committee**

Dr. Thasleema T.M. Mr. Kumar V. Dr. Manohar N.S.

## **Technical Committee**

Mr. Sreelesh V. Mr. Fasil O.K. Mrs Shabina Baskar Mrs Adithya V.

# **Technical and Logistic Support:**

IEEE Student Branch, Central University of Kerala

### Contact

Mobile – 09894850299, 9746854590 Email: rajeshr@cukerala.ac.in, fasilok92@gmail.com







# 5-Day National Level Workshop on Robotics

1st - 5th November 2019





**Sponsored by AICTE Training and Learning (ATAL) Academy** 

and Organized by
Department of Computer Science,
Central University of Kerala

### Registration

Faculty members, Research Scholars and PG students from AICTE approved institutions and other research institutions who are interested in pursuing research in emerging areas of Robotics are eligible for the workshop. Those who are interested should apply/register online by visiting

https://forms.gle/nZBVQM9jZgC9X7eZ9

or

https://www.aicte-india.org/sites/default/files/ATAL/registration/

- There is no registration fee from any participants
- No TA/DA will be paid to any participants.
- Number of participants is limited to 50.
- Participants will be selected on first-come first served basis.
- Selected candidates will be intimated by e- mail.
- Participants will have to make their own stay arrangements during the five days.

5-Day National Level Workshop on

Robotics

1<sup>st</sup> – 5<sup>th</sup> November 2019 Sponsored by

AICTE Training And Learning (ATAL) Academy and Organized by

Dept. of Computer Science, Central University of Kerala

(Fill, scan this part and send by email to rajeshr@cukerala.ac.in)

## **Registration Form**

Name:	-
Designation:	_
Institution:	-
Address:	-
	_
Mobile:	_
E-Mail ID:	

## **DECLARATION**

I declare that all the details furnished above are true to the best of my knowledge and I agree to abide by the rules and regulations governing the conduct of Five Days national workshop on Robotics.

Date:

Place: Signature of the Applicant.

### DECLARATION

This is to certify that \_\_\_\_\_ is regular employee / Research Scholar/ PG Scholar of our institutions and is hereby permitted to attend the Five Days national workshop on Robotics during  $1^{\rm st}-5^{\rm th}$  November 2019

Date:

Place: Signature of the HoD/Principal. with seal

### **Objectives**

The objective of this course is to impart necessary and practical knowledge of components of robotics and develop skills required to build real-life Robotics based projects.

## **Learning Outcomes**

After the completion of this course, the participants will be able to:

- Understand robotics and its hardware and software components
- Interface I/O devices, sensors & communication modules
- Remotely monitor data and control devices
- Develop real life robotics based projects

# **Topics**

- Introduction to Robotics
- Applications of Robotics
- Programming with Arduino/Raspberry Pi
- Current challenges in Modern Robotics
- Mechanics and Control of Robotic Systems
- Hands on session on Obstrucle avoidance
- Modeling Drone
- Modeling 3D printer



## **Speakers**

Dr. Santhakumar Mohan Associate Professor, Dept. of Mechanical Engineering IIT Palakkad

Dr. Rajesh R.

Associate Professor and Head, Dept. of Computer Science, Central University of Kerala

Mr. Nithin R.S.

IEEE Young Professional Chair, IEEE Kerala Section

Mr. Fasil KV

R&D Head, Quovadis Robosoftech

Mr. Arjun Udayakumar

Embedded Progammmer, Quovadis Robosoftech







### AICTE TRAINING AND LEARNING (ATAL) ACADEMY

CET Campus, Thiruvananthapuram-695016 Phone:0471-2592323, 4343, 6363, 7099 email: ataltrv@aicte-india.org Website: www.aicte-india.org/atal

F.No. 1-153/AICTE/KERALA/2019 .10.2019

To

The Registrar, Central University of Kerala Periye - 671316, Kasaragod.

Sub: Release of a sum of Rs 1,62000 /-for AICTE Training And Learning (ATAL) Academy programme- Reg.

Sir,

This is to convey the sanction of the Council for payment of Rs. 162000 /- (Rupees One Lakh Sixty-Two Thousand Only) for conduct of AICTE Training And Learning (ATAL) Academy programme Robotics to Department of Computer Science Central University of Kerala Periye - 671316, Kasaragod Scheduled on 01-11-2019 under AICTE Training And Learning (ATAL) Academy.

This fund is being released in conformity with the terms & conditions as well as norms of the scheme as already communicated, and also being communicated in this letter.

# The instructions/guidelines to be followed by University/Institution

# I. Release of funds and maintenance of accounts

- **a.** The University/College/Institute shall maintain proper accounts of the expenditure out of the grants, which shall be utilized only on approved items of expenditure.
- b. The cost for conducting per programme will be Rs.1,62,000/- as per detail given as under:

S.No	Particulars	Amount
1.	Honorarium for Director	Rs. 10,000/-
2.	Honorarium to Co-ordinator Rs.2000/- per day x 5 days	Rs. 10,000/-
3.	Honorarium for experts (Rs.3000 per session for total 14 session)	Rs. 42,000/-
4.	Refreshment & Lunch (Rs. 300 per head for 50 trainees for 5 days)	Rs. 75,000/-
5.	Institutional charges	Rs. 15,000/-
6.	Miscellaneous charges	Rs. 10,000/-
	TOTAL	Rs, 1,62,000/-

c. The grant is subject to the adjustment on the basis of Utilization Certificate in the prescribed proforma to be submitted by the University/College/Institution.

### II. Disbursement of funds to institutions

The full amount of the grant sanctioned will be released as an advance to the University/Institute through electronic transfer on the account of the University/Institute after submission of mandate form



### III. Conduct of test and issuance of certificate

- □ A test shall be conducted by coordinator at the end of the program.
- ☐ The certificates shall be issued to those participants who have attended the program without any absenteeism and scored minimum 60% marks in the test.

# IV. Submission of documents by university/institution

- **a.** The following mandatory relevant documents are required to be submitted by the university/institution within one month of the completion of the program: -
  - List of candidates who have successfully completed the program on the basis of the test conducted by Program Coordinator.
  - (ii) A program completion report along with photographs, videos, media report is to send after the completion of workshop along with the list of participants and Utilization Certificate, Expenditure Statement and feedback form etc. within one month of conduct of **AICTE Training And Learning (ATAL) Academy programme**.
- b. The amount of the grant shall be adjusted on submission of utilization certificate & detailed expenditure statement by University/Institution. On receipt of these documents, the total amount of financial assistance, admissible as per the norms, shall be worked out and grant-in-aid shall be adjusted.

### V. General Instructions

- a. Participants has to be faculty of AICTE approved institutions/ Host Institution/Research Scholar/PG Scholar.
- b. If programme is not conducted in the year 19-20, the released amount, along with interest accrued thereon, has to be returned back to AICTE.
- c. Any extra money required to complete the programme must be borne by the institute from their own resources but the quality of the activities should not be compromised.
- d. Any unavoidable circumstantial change in the Program with respect to name of Project Coordinator, Venue and date for organizing AICTE Training And Learning (ATAL) Programme would mandatorily require prior approval of the Council. All such requests should be addressed to ATAL Academy, in advance, recording the specific reasons for proposed changes, failing which the offer for the grant already issued would be treated as automatically withdrawn and the financial assistance released in favour of the beneficiary institution shall be refunded immediately to the Council.
- e. This Sanction Order may be treated as Offer Letter for all purposes.

Yours sincerely,

Director ATAL Academy Trivandrum

Copy forwarded for information and necessary action to: -

1.Dr. Rajesh R, Department of Computer Science Central University of Kerala

2. ATAL Academy Cell AICTE HQ

3. Guard File

# National Level Workshop on Robotics Sponsored by AICTE Training And Learning (ATAL) Academy

Organized by Department of Computer Science, Central University of Kerala  $1^{\text{st}} - 5^{\text{th}}$  November 2019









# Schedule plan

Dates	10:00 AM to 11:30 AM	11:30 AM to 12.00 PM	12.00 PM to 1.30 PM	1.30 PM to 2:30 PM	2:30 PM to 4.00 PM	4:15 PM to 4:45 PM
01/11/2019	Registration and Inauguration	High Tea	Session 1 Current challenges in Modern Robotics	Lunch	Session 2 Mechanics and Control of Robotic Systems	Tea
02/11/2019	Session 3 Components of Robotics	Tea	Session 4 Programming with Arduino and sensors	Lunch	Session 5 Programming with Raspberry Pi and sensors	Tea
03/11/2019	Session 6 Modeling Obstrucle avoidance system	Tea	Session 7 Hands on session on Obstrucle avoidance	Lunch	Session 8 Modeling Line Follower	Tea
04/11/2019	Session 9 Hands on session on Line follower	Tea	Session 10 Modeling Drone	Lunch	Session 11 Visit to Central Plantation Crops Research Institute or Kerala Agricultural University to study possible applications	Tea
05/11/2019	Session 12 Modeling 3D printer	Tea	Session 13 Working with 3D printer	Lunch	Session 14 Future trends and applications	Valediction

<sup>\*</sup> Slight changes may be there in the topics









# **REPORT**

# FIVE DAYS NATIONAL WORKSHOP ON ROBOTICS

1<sup>ST</sup> – 5<sup>TH</sup> November 2019 at Central University of Kerala

AICTE TRAINING AND LEARNING ACADEMY, TRIVANDRUM

# **ROBOTICS**

AICTE Training and Learning (ATAL) academy sponsored Five Days National Workshop on Robotics has been organized by Central University of Kerala from 1<sup>st</sup> to 5<sup>th</sup> November 2019 in which 82 participants attended the workshop.

The speakers for the 5-day workshop on "ROBOTICS" were:

# Dr. Santhakumar Mohan, Associate Professor, IIT Palakkad



Dr. Santhakumar Mohan is currently working as an Associate Professor in the Department of Mechanical Engineering, Indian Institute of Technology, Palakkad. He got his PhD (Robotics and Control) from Indian Institute of Technology Madras, Chennai (India) in 2010. From June 2010 to March 2011, he worked as an assistant professor in the Department of Mechanical Engineering at National Institute of Technology Calicut (NITC), Kerala (India). He then worked as world-class

university (WCU) postdoctoral fellow at Korean Advanced Institute of Science and Technology (KAIST), Daejeon (Republic of Korea), in addition to this, he received another prestigious Brain Korea 21 (BK21) Postdoctoral fellowship with the same institute from September 2011 to March 2012. In 2012, he joined the faculty of the Mechanical Engineering at Indian Institute of Technology Indore. He is holding visiting faculty positions at IISc Bangalore, India, RWTH Aachen, Germany and ECN, France. His active research areas include underwater vehicle and underwater manipulator design and control, parallel robotic platforms, assistive robots, field and service robots, intelligent motion control, and, dynamic modelling and control of dynamic systems. Furthermore, he has received the outstanding young Scientist for the year 2014 from Korea Robotics Society, European Master on Advanced Robotics Plus (EMARO+) fellowship (2018-2019) and Alexander von Humboldt (AvH) Fellowship (2016–2017). He has published more than 100 articles in various journals and conference proceedings.

# Mr. Sacheth Sanal, CEO, Revinin Technology



Mr. Scheth Sanal is the CEO of Revinin Technology. He is expert in embedded systems. He has conducted a lot of embedded system seminar across Kerala as part of ATAL Tinker lab. He is a member of IEEE and IEEE young professional.

# Mr. Adith Krishnan, Embedded Developer, Quolabs



Mr. Adith Krishnan is currently working as an Embedded Developer at Revinin Technology. He has wide experience in delivering invited talks and conducting Embedded workshop throughout Kerala. He is a member of IEEE and IEEE young professional.

# Mr. Nithin P.S., CEO of Quovadis Robosoftech, Thiruvananthapuram



Mr. Nithin P.S. is the chair of IEEE Young Professional, IEEE Kerala Section. He has experience in organizing fully IEEE funded international conference inside and outside India. He is the CEO of Quovadis Robosoftech. He is an expert in the field of IOT and embedded systems.

# Dr. Rajesh R., Associate Professor and Head, Department of Computer Science, Central University of Kerala



Dr. Rajesh R. is currently working as an Associate Professor in the Department of Computer Science, Central University of Kerala. He has more than 14 years of research and teaching experience. He has delivered more than more than 60 invited talks in various institutions. He has published more than 80 papers in various journals and conference proceedings. His specializations include Intelligent systems, control, fuzzy systems, neural networks, deep learning, image processing nature inspired computing, evolutionary algorithms, IOT. He is a senior member of IEEE and IEEE Computational Intelligence Society.

The Department of Computer Science, Central University of Kerala has organized 5 days national workshop on Robotics sponsored by AICTE Training and Learning Academy (ATAL) during 1<sup>st</sup> – 5<sup>th</sup> November 2019. The coordinator/organizing secretary was Dr. Rajesh R, Associate Professor and Head, Department of Computer Science, Central University of Kerala. The purpose of this workshop was to motivate and train the participants on topic of Robotics with some hands-on experience. 82 participants attended the workshop.

The workshop started with a prayer song. The welcome address was delivered by Dr. Rajesh R., Associate Professor and Head, Department of Computer Science, Central University of Kerala. The Programme was presided by Prof. (Dr.) M.R. Prathapachandra Kurup, Dean of School of Physical Sciences, Central University of Kerala and he provided the special address. The Programme was inaugurated by Prof. (Dr.) Gopa Kumar G., Vice Chancellor, Central University of Kerala by lighting the lamp and delivering the inaugural address. The keynote address was delivered by Dr. Santhakumar Mohan, Associate Professor, Department of Mechanical Engineering, Indian Institute of Technology, Palakkad. The inaugural session ended by the delivery of vote of thanks by Dr. Manohar N.S.







The first session of the workshop was on the topic of "Challenges on Robotics" and was delivered by Dr. Santhakumar Mohan, Associate Professor, Indian Institute of Technology, Palakkad. He started with a brief history of Robotics and it was followed by various bottlenecks & challenges of Robotics. He winded up the first session by showing the various application/research possibilities of Robotics.

The second session of the workshop in the afternoon was on the topic of "Mechanics of Robotics". He also shared his experience in Robotics for the last one decade in various countries.





In the second day of the workshop, all the three sessions were handled by Mr. Scheth Sanal, CEO of Revinin Technology. He covered the following topics: (i) introduction to flowchart based programming software for arduino/stemscl, (ii) hands on sessions on flowcharts and its usage in arduino uno, (iii) experiments and hands on using flowchart based usage of LED, LDR, Buzzer, motor, switch, timers, ultrasound sensor, etc. in arduino/stemscl.





















The first and second sessions on the 3<sup>rd</sup> day was dedicated to project development by dividing the participants into 9 teams. The project assigned to each team was different, namely, Fridge control, smart light dimmer, burglar alarm, washing machine control, smart street, temperature control, smart hat, bike indicator, and traffic light. After developing the project, the teams were allowed to explain it and also defend and answer for the question raised by the other opponent teams. The third session was on 3D modeling using tinkercad for 3D printing.

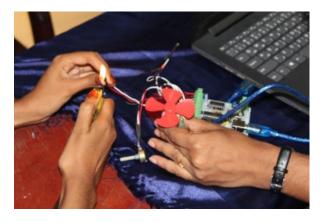


































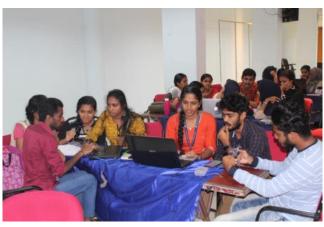


The sessions on the fourth day was hands on experiments with Bluetooth connectivity for arduino and experiments with the use of relays.









The first two sessions on the fifth day was (i) hands on design and development of line tracking robot by 10 teams, (ii) design of obstruction avoidance robot, (iii) demo of drone, (iv) demo on virtual reality. The third session on the fifth day was the talk by Dr. Rajesh R. on extended research possibilities on robotics.







































Cash Prize to Best Robot (Cash Prize Sponsored by Faculty)

























An examination with duration of 30 mints has been conducted. The valedictory function was chaired by Dr. Rajesh R. A feedback session was also arranged. During the valedictory function the certificate were distributed to the participants.

During the conclusion oral and written feedback from the participants were collected. Both in the oral and written feedback the conduction of the workshop was well appreciated by the participants. Formally the function was concluded by rendering vote of thanks by Dr. Rajesh R., the coordinator of the program.

ATAL Five day's National workshop on Robotics



Malayala Manorama News cutting on 2<sup>nd</sup> November 2019.



# **AICTE - ATAL PROGRAM : ATTENDANCE SHEET**

Institu Kerala	te Name- Central University of	Coordinator's Name - Dr. Rajesh R.  Date of Program- (1/11/2019 to 5/11/2019)		Th	Thrust Area- Robotics  Course code- ATVR0114	
	te Address- Central University ala, Periya – 671320, Kasaragod			Со		
S.No.	Name of Participant (In CAPITAL LETTER )	Category(Faculty/ Research Scholar/ PG Student)	Participant's Institute	Mobile No.		Email address
1.	Sandeep Chandran	Faculty	LBSCE, Kasaragod	949520	07906	sandeeplbscek@gmail.com
2.	Reshma K.V.	Faculty	Vimal Jyothi Engineering College, Chemperi, Kannur	94470	062721	reshmakv@vjec.ac.in
3.	Divya K.	Faculty	Vimal Jyothi Engineering College, Chemperi, Kannur	94006	72652	divyavinod@vjec.ac.in
4.	Malikasab Bagawan	Faculty	MVSR Engineering College Nadergul, Hyderabad, Telangana	72045	556722	bagawanmalik@gmail.com
5.	Prashant Tadalagi	Research Scholar	Basaveshwara Engineering College Vidayagiri, Bagalkot, Karnataka	988084	341937	pbtadalagi999@gmail.com
6.	Rajesh Gurani	Research Scholar	Basaveshwara Engineering College Vidayagiri, Bagalkot, Karnataka	78929	17354	razabvp@gmail.com
	M. SARANYA	Faculty	K.S.R COLLEGE OF ENGINEERING, Tiruchengode, Namakkal, Tamil nadu	90033	98632	saranyam1295@gmail.com

			K.S.R COLLEGE OF ENGINEERING,		
8.	R.POOVARASAN	Faculty	Tiruchengode, Namakkal, Tamil nadu	9566374935	poovarasan29@gmail.com
			K.S.R COLLEGE OF ENGINEERING,		
9.	NIRMALA GANDHI J	Faculty	Tiruchengode, Namakkal, Tamil nadu	9788774788	nirmalamuthu@gmail.com
			K.S.R COLLEGE OF ENGINEERING,		
10.	VENKATESH GURU K	Faculty	Tiruchengode, Namakkal, Tamil nadu	9566524111	guru2ksr@gmail.com
			K.S.R COLLEGE OF ENGINEERING,		
11.	NITHYA N S	Faculty	Tiruchengode, Namakkal, Tamil nadu	9095806689	sachinnithya2@gmail.com
12.	Adithya V	Ph.D. scholar	Central University of Kerala	9495212841	adithyaushas88@gmail.com
13.	FASIL O. K	Research Scholar	Central University of Kerala	9746854590	fasilok92@gmail.com
14.	Shabina Bhaskar	Ph D Scholar	Central university of Kerala	9495426996	shabinabhaskar@gmail.com
15.	Kumar V	Faculty	Central University of Kerala	9567435951	Kumar.sanvi@gmail.com
			K.S.R COLLEGE OF ENGINEERING,		
16.	BABY ANITHA E	Faculty	Tiruchengode, Namakkal, Tamil nadu	9095793230	ebabyanitha@gmail.com
17.	Akhil Vinayak P	Pg scholar	Central university of Kerala	6282604974	nirvanaosborn@gmail.com
18.	Akshara Krishna P	PG Scholar	Central university of Kerala	7902433741	aksharakrishnap6@gmail.com
19.	AKSHAYA K	PG SCHOLAR	Central University of Kerala	7592972341	akshaya16021999@gmail.com
20.	Albin Jose	PG student	Central University of Kerala	8086736561	albinjosmattathil@gmail.com

21.	Amal Raj P V	P G scholar	Central university of Kerala	7012757605	amalrajmsd77@gmail.com
22.	Anjaly P G	PG Scholar	Central University of Kerala	9961239376	anjalypg19981107@gmail.com
23.	Anu Sebastian	PG Student	Central university of Kerala	9645793784	anuansebastian@gmail.com
24.	Aswini P R	PG Scholar	Central University of Kerala	9207482709	aswiniperuthady@gmail.com
25.	Ayshath Ramseena CA	PG scholar	Central University of Kerala	7902937713	ramsica010@gmail.com
26.	Giril Shaju	PG Scholar	Central University of Kerala	9745302016	jirilcherianshaju@gmail.com
27.	GOKUL KRISHNA E	PG Student	Central university of Kerala	9961683998	gokul44krishna@gmail.com
28.	Keerthi D	PG Student	Central university of Kerala	8138074864	keerthidev36@gmail.com
29.	Khadeejath Noufeera	PG Scholar	Central University of Kerala	9947315162	noufeeran@gmail.com
30.	Kune Praveen Kumar	PG Scholar	Central university of kerala	7993644042	kunepraveenkumar@gmail.com
31.	Leo Vattoly	Pg scholar	Central University of Kerala	8129566446	leovattoly13@gmail.com
32.	Meghana.A	PG Student	Central university of Kerala	9746373399	meghana.kilingar@gmail.com
33.	Muhammed Riyas A	PG Scholar	Central University of Kerala	8089999424	riyasmuhammed306@gmail.com
34.	Mushrifa Backer P.A	PG scholar	Central University of Kerala	8547233644	mushrifapanalam@gmail.com
35.	Navyasree K.S.	P.G. Student	Central university of Kerala	8139032711	navyasamekochi@gmail.com

36.	Priya Devi P	P.G. Student	Central university of Kerala	9526777293	priyapriyadevi1997@gmail.com
37.	Reshma Raju	P.G. Student	Central University of Kerala	7034320386	reshmaraju068@gmail.com
38.	Riya Shekhar K	PG Scholar	Central university of Kerala	9961877368	riyashekharudma@gmail.com
39.	Roshna Abdullah	PG Scholar	Central university of Kerala	8301959975	roshnaabdullathekkil@gmail.com
40.	Sarath T R	P.G. Student	Central university of Kerala	8848201913	sarath121udma@gmail.com
41.	Shameema S	P.G. Student	Central university of Kerala	8138988496	shameemashafi02@gmail.com
42.	SHIVARAMA KRISHNA PK	PG SCHOLAR	Central university of Kerala	7012981322	srkpk.madhur@gmail.com
43.	Snehamol K	PG scholar	Central University of Kerala	8547321950	snehamohanan01998@gmail.com
44.	Sreekanth. O.P	PG student	Central University of Kerala	9847773370	sreekanthopmahe@gmail.com
45.	Sreeshma K	PG scholar	Central university of Kerala	7034255217	sreeshmamolk@gmail.com
46.	Sruthi M	PG Scholar	Central university of Kerala	7025757464	sruthimukkunnoth@gmail.com
47.	Thanusree V	PG scholar	Central University of Kerala	9544498421	thanusreethanu97@gmai.com
48.	Lajisha M.P	PG student	Central university of Kerala	9562032412	lajishamp95@gmail.com
49.	P Dharma Teja	PG scholar	Central University of Kerala	7032847952	pdharmateja199@gmail.com
50.	SANGEETHA K	PG STUDENT	Central University of Kerala	7591932005	ksangeetha880@gmail.com

51.	Vaishali Ravi	PG scholar	Central University of Kerala	9074535243	rvaishali23@gmail.com
52.	Abraham Thomas	P.G Student	Central university of Kerala	8138046189	abrahamvtd@gmail.com
53.	Ajith K	PG scholar	Central university of Kerala	9645673738	ajith781997@gmail.com
54.	Amith V	PG scholar	Central University of Kerala	9961757294	anithamith@gmail.com
55.	Anjuraj V.P.	PG scholar	Central University of Kerala	7559012039	anjupalakkunnu97@gmail.com
56.	Anumod K K	PG Scholar	Central University of Kerala	9495212841	anumod.kk143@gmail.com
57.	Athulya N	PG Student	Central university of kerala	8281780251	athulyavidyadharan@gmail.com
58.	Laxman. B	PG scholar	Central university of Kerala	8341734007	laxmanramabhi@gmail.com
59.	Chandini Govind	PG scholar	Central University of Kerala	8289840133	chandinigb@gmail.com
60.	Jaseena Shajudeen	PG student	Central University of Kerala	8547136220	jaseena1498@gmail.com
61.	Manas Rahman	PG Scholar	Central University of Kerala	9526784312	manasrahmanpadiyoor@gmail.com
62.	Maneesha K	PG Scholar	Central University of Kerala	8281226119	maneeshaerol@gmail.com
63.	Midhun P.M.	PG Scholar	Central University of Kerala	9526329567	mithunpm67@gmail.com
64.	Muhammed Saleel K.	PG. Scholar	Central University of Kerala	9847543210	saleelskp@gmail.com
65.	Munshida P	PG Student	Central university of Kerala	8592865086	munshidap808@gmail.com

66.	Navya C John	PG scholar	Central University of Kerala	8136969615	navyajohn357@gmail.com
67.	Nishaban P K	PG scholar	Central university of Kerala	8606929069	nishabanpk@gmail.com
68.	Prithviraj M.K.	PG student	Central university of Kerala	9497251503	Prmk28612@gmail.com
69.	Sajitha KN	PG scholar	Central University of Kerala	8086297096	knsajitha1998@gmail.com
70.	SILPA K	PG student	Central University of Kerala	9656457834	silpavellinezhi@gmail.com
71.	Soumen Das	P.G Student	Central university of Kerala	7001582548	soumenbondhu@gmail.com
72.	SREELEKSHMI M.S	PG scholar	Central University of Kerala	8606080823	sreelekshmitvnr@gmail.com
73.	VISHNU M.P	PG SCHOLAR	Central University of Kerala	9544380551	vishnumadhavanunni@gmail.com
74.	Greeshma G.K	PG student	Central University of Kerala	8086542755	appucherkala@gmail.com
75.	Kavya Balan	PG scholar	Central University of Kerala	9048061931	kpnair27@gmail.com
76.	Shaini P.	Faculty	Central University of Kerala	9048962747	shainipv@gmail.com
77.	Ashfaq Ahmad	Research Scholar	Central University of Kerala	7051234560	ishfaqnajar@gmail.com
78.	Gnanavel S.	Faculty	Central University of Kerala	9605798241	Gnanavel.math.bu@gmail.com
79.	Dr. Manohar Naik S	Faculty	Central University of Kerala	9885883395	manoharamen@cukerala.ac.in
80.	Dr. Thasleema T.M.	Faculty	Central University of Kerala	9497295948	thasleema@cukerala.ac.in

81.	Dr. T. Mallikarjunappa	Faculty	Central University of Kerala	9480500025	tmmallik@cukerala.ac.in
82.	R Rajesh	Faculty	Central University of Kerala	9894850299	rajeshr@cukerala.ac.in

# AICTE Training And Learning(ATAL) Academy Programme

# FORMAT FOR STATEMENT OF EXPENDITURE

AICTE File No.

1-153/AICTE/KERALA/2019

Title of the Programme

ROBOTICS

Name of the Coordinator:

Dr. Rajesh R.

Sanction No. and Date	Grant Sanctioned	Details of expenditure Incurred Itemwise Amount Rs.		No.of Participants	Duration of the Programme (with dates)	
1-153/AICTE /KERALA/	1,62,000	Honorarium to the Director	10,000	82	5 days	
2019		Honorarium to     Course Coordinator	10,000		1 <sup>st</sup> November	
25 <sup>th</sup> Oct 2019		3	3. Honorarium to Resource Persons	42,000	20	2019 to 5 <sup>th</sup>
		4: Refreshment & Lunch	75,000		November 2019	
		5. Institutional Charges	15,000			
		6. Miscellaneous	10,000			
		Charges	1,62,000			
		Grant Received	1,62,000			
	7-81	Balance to be Received	Nil			

HEAD

Department of Computer Science

Name and Signature Of Coordnatornala

with Seal Jaswini Hills, Periye - 671316

Kasaragod, Kerala

(3) Signature (with Seal ) of the Finance Officer/
Auditor/Accounts Officer
(If it is Govt./Govt. Aided Institute)

Dr. B.R. Prosanna Kumar विशे अधिकारी / Finance Officer (2) \_\_\_\_\_\_बॉ.ए.राघाकृष्णन नायर Name and Signature of A. RADHAKRISHNAN N Head of Institution with Seal हरते केंद्रीय विश्वविद्यालय

CENTRAL UNIVERSITY OF K तेजरिवनी हिल्स, पेरिया डा TEJASWINI HILLS, PERIYA कासरगोड / KASARAGOD-61

(4) Signature of Chartered Accountant:

Name of Chartered Accountant: Membership No:

Rubber stamp:

Full Address:

Date:

Note:-If it is more than one page, each page must be signed in all annexure

# CENTRAL UNIVERSITY OF KERALA, PERIYA - 671320, KASARAGOD

# UTILIZATION CERTIFICATE FOR THE FINANCIAL YEAR (2019-20)

Name of the Scheme under which Grant was sanctioned; AICTE Training and Learning Academy (to be submitted separately for each sanction order)

AICTE File No.

1-153/AICTE/KERALA/2019

Name of Co-ordinator

Dr. Rajesh R.

Dates of the Programme

1\*1-5\*\* November 2019

Title of the ATAL Programme

Robotics

SI. No.	AICTE Sanction Order/ Letter No. & Date under which grant was sanctioned	Amount (Rs.)	Certified that out of the grant-in-aid of Rs. 1,62,000 (one lakh and
1.	1-153/AICTE /KERALA/ 2019 25 <sup>th</sup> Oct 2019	1,62,000	Certified that out of the grant-in-aid of Re. (Certified that out of the grant-in-aid of Re. (Certified that out of the grant-in-aid of Re. (Certified the financial sixty two thousand) sanctioned by the AICTE during the financial year 2019 in favour of Central University of Kerala as per letter year 2019 in favour of Central University of Kerala as per letter year 2019 in favour of Central University of Kerala as per letter year 2019 in favour of Certified (Certified that year Re. (Certified that year and the year year) in favour of the year year year year year year.

Certified that I have satisfied myself that the conditions on which the grant-in-aid was sanctione have been duly fulfilled and that I have exercised the following checks to see that the money wa actually utilized for the purpose for which it was sanctioned.

# Kinds of checks exercised: -

Audited Annual Accounts of the Institute Receipt and Payment account Periodical Progress Reports.

(1). Name, Signature & Address of the Claimant/Awardee/Coordinator with seal:

Screen of Mathematical & Physical Science Central University of Kerala Tejaswini Hills, Periye - 671316 Kasaragod, Kerala

2). Signature of Chartered Accountant:

Name of Chartered Accountant:

Membership No:

Rubber stamp: Full Address:

Date:

(3). Signature of Head of the Institute:

Name & Designation of the Head of Institute:

Rubber stamp HAKRISHNAN NAIR Full Address | REGISTRAR केंदर केंद्रीय विश्वविद्यालय

Date:

CENTRAL UNIVERSITY OF KERALA

TEIASWINI HILLS, PERIVA RO WINTER / KASARAGOD #71318

(4). Signature of the Finance Officer/Accounte-Officer: Name of the Finance Officer/Accounts Officer:

(If it is Govt./Govt. Aided Institute)

Note:-If it is more than one page, each page must be signed in all annex