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# CERTIFICATE COURSE ON



# MICROPROCESSOR AND MICROCONTROLLER

# CONDUCTED BY DEPARTMENT OF PHYSICS

Starts on 05/09/201 Ends on 05/01/202 This course will start with a discussion on a simple microprocessor, complex CPU architecture. It will be followed by a complete overview of a range of microcontrollers covering 8051,8086, I/O interfacing and 8085. Understanding this architecture is the basis to follow any other microcontrollers.

Admission starts o 16/08/2020. Available Seats: 25

For more Information, contact SRIJITH S (coordinator)

Ph. No: 9633500425

# MICROPROCESSOR AND MICROCONTROLLER

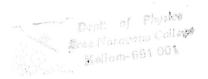
### **COURSE OVERVIEW**

Microprocessors are used extensively in the design of any computing facility. It contains units to carry out arithmetic and logic calculations, fast storage in terms of registers and associated control logic to get instructions from memory and execute them. A number of devices can be interfaced with them to develop a complete system application. On the other hand, microcontrollers are single chip computers, integrating processor, memory and other peripheral modules into a single System-On-Chip (SoC). Apart from input-output ports, the peripherals often include timers, data converters, communication modules, and so on. The single chip solution makes the footprint of the computational element small in the overall system package, eliminating the necessity of additional chips on board. However, there exists a large range of such products. While the simpler microcontrollers are cheap, their capabilities (in terms of program size and analog and digital peripherals) are also limited. Such processors may be suitable for small applications. Microcontrollers like 8051, belong to this category. On the other hand, advanced microcontrollers are often much more powerful, comparable to the very advanced microprocessors.

This course will start with a discussion on a simple microprocessor, 8085. Understanding this architecture is the basis to follow any other complex CPU architecture. It will be followed by a complete overview of a range of microcontrollers covering 8051,8086, I/O interfacing and microcontrollers. The hardware intricacies of these processors and their programming will be covered.

### Course Outcome

- Develop an ALP in 8085 microprocessor using the internal organization for the given Specification.
- 2. Describe the architecture and functional block of 8051 microcontroller
- 3. Develop an embedded C and ALP in 8051 microcontroller using the internal functional blocks for the given specification



# SYLLABUS (Theory: 32 Hrs and Practicals: 8 Hrs)

# UNIT I THE 8086 MICROPROCESSOR (08 Hrs)

Introduction to 8086 – Microprocessor architecture – Addressing modes – Instruction set and assembler directives – Assembly language programming – Modular Programming – Linking and Relocation – Stacks – Procedures – Macros – Interrupts and interrupt service routines – Byte and String Manipulation.

# UNIT II 8086 SYSTEM BUS STRUCTURE (08 Hrs)

8086 signals — Basic configurations — System bus timing —System design using 8086 — I/O programming — Introduction to Multiprogramming — System Bus Structure — Multiprocessor configurations — Coprocessor, Introduction to advanced processors.

# UNIT III I/O INTERFACING (08 Hrs)

Memory Interfacing and I/O interfacing – Parallel communication interface – Serial communication interface – D/A and A/D Interface – Timer – LED display and LCD display.

# UNIT IV MICROCONTROLLER (08 Hrs)

Architecture of 8051 – Special Function Registers(SFRs) – I/O Pins Ports and Circuits – Instruction set – Addressing modes – Assembly language programming.

### Practical Exercises (08 Hrs)

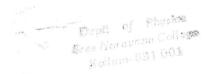
- 1. Develop assembly language program for subtraction of two numbers using  $\mu P$  8085 kit.
- 2. Develop assembly language program for multiplication of two numbers using  $\mu P$  8085 kit.
- 3. Interface seven segment LED display with 8051 kit.
- 4. Interface LCD display with 8051 kit.
- 5. Control speed of stepper motor using 8051 kit.

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### **Books for Study**

- 1. Microprocessor Architecture, Programming and Applications with 8085: Gaonkar, Ramesh S. Penram International Publishing (India) Pvt. Ltd. New Delhi (5th Edition)
- 2. Fundamentals of Microprocessors and Microcontrollers: Ram, B. Dhanpat Rai Publications, New Delhi
- 3. Microprocessors and Interfacing Programming and Hardware: Hall, Douglass V. TMH publication, New Delhi, (latest Edition)
- 4. The 8051 Microcontroller Architecture, Programming and Applications: Ayala, Kenneth J. Penram International Publishing (I) Pvt. Ltd. New Delhi
- 5. The 8051 Microcontroller and Embedded Systems using Assembly and C: Ali, Muhamad Mazidi, Janice Mazidi Gillispie, Rolin D. Mckinleay, PHI Learning, New Delhi, (latest Edition) List of Software/Learning Websites
- 1. www.keil.com/
- 2. www.allaboutcircuits.com
- 3. www.nmbtc.com
- $4.\ http://nptel.ac.in/courses/Webcoursecontents/IITKANPUR/microcontrollers/micro/ui/Course\_homel\_1.htm$

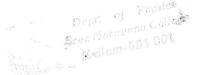


## **Certificate Courses**

## **Members of the Board Studies**

The following faculties are selected as Members of Board of studies for Certificate courses (Microprocessor and Microcontrollers, Python Programming) Conducted by Department of Physics, Sree Narayana College, Kollam in the academic year 2019-20.

	Name	Designation
1	Dr. R. Sunilkumar	Principal, Associate Professor, Department of
		Malayalam, Sree Narayana College, Kollam.
2	Dr.G.Sajeevkumar	Associate Professor, Department of Physics,
		Sree Narayana College, Kollam.
3	Sri. Srijith S	Assistant Professor, Department of Physics,
		Sree Narayana College, Kollam
4	Smt. Asitha L.R	Assistant Professor, Department of Physics,
,		Sree Narayana College, Kollam
5	Sri. Baiju V	Assistant Professor, Department of Physics,
		Sree Narayana College, Kollam
6	Dr. Dedhila Devadathan	Assistant Professor, Department of Physics,
		Sree Narayana College, Kollam
7	Dr. Sankar S	Assistant Professor, Department of Physics,
		Sree Narayana College, Kollam
8	Dr. Roxy M S	Assistant Professor, Department of Physics,
1		Sree Narayana College, Kollam
9	Dr. Vidya S	Assistant Professor, Department of Physics,
		Sree Narayana College, Kollam



10	Smt. Rehna R	Assistant Professor, Department of Physics,
	,	Sree Narayana College, Kollam
11	Smt. Saranya Babu	Assistant Professor, Department of Physics,
	, v	Sree Narayana College, Kollam
14	Dr. Mohammad Salim	Assistant Professor, Department of Physics,
		TKMCAS
15	Sri. Safir T	Assistant Professor, Department of Physics,
,		TKMCAS
16	Smt. Aparna L R	Assistant Professor, Department of Physics,
		Sree Narayana College, Kollam TKMCAS
17	Dr. P. K. Manoj	Assistant Professor, Department of Physics,
		Sree Narayana College, Kollam TKMCAS

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### Minutes of the Meeting

The minutes of the meeting of the BoS of Certificate courses was held on 28th August, 2019 in the Department of Physics, Sree Narayana College, Kollam at 10.00 a.m. The following members were present for the meeting.

1	Dr.Sajeev Kumar G	9	Smt.Rehna R
2	Dr.Sankar S	10	Smt.SaranyaBabu
3	Smt. Asitha L R	11	Sri. Vipin Kumar C
4	Sri. Srijith S	12	Smt. Aparna L.R
5	Sri. Baiju V	13.	Dr. Muhammed Salim
6	Dr. Roxy M S	14	Dr.P. K. Manoj
7	Dr. Dedhila Devadathan	15.	Sri. Saffir T K
8	Dr. Vidya S		

The following points were discussed in the meeting.

- The BoS has decided to initiate the following courses in the academic year 2019-20.
- 1. MICROPROCESSOR AND MICROCONTROLLER (MM)
- 2. PYTHON PROGRAMMING (PY)
- The syllabus for the above courses was designed by the committee by considering the global needs and demand of the market.
- It was decided to conduct the above courses for more than 30 hours.
- The committee has framed the time-table apart from the academic hours.
- While running the course there are some expenditures such remuneration for the trainers, stationery and miscellaneous. Therefore, the minimum affordable fees should be charged.
- The committee has suggested to appoint the trainers for the above courses.
- The board has decided to initiate the certificate coursesas per the demand of the stakeholders and approval of I.Q.A.C.

Sri. Srijith S proposed vote of thanks and the meeting was ended.

Sri. Srijith S proposed vote of the state of

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Sees Noroweno College

Kollam-693 004

### Minutes of the Meeting

The minutes of the meeting of the BoS of Certificate courses was held on 12th August, 2018 in the Department of Physics, Sree Narayana College, Kollam at 10.00 a.m. The following members were present for the meeting.

- 1 Dr. Anitha Sankar
- 2 Dr. Sankar S
- 3 Smt. Asitha L R
- 4 Sri. Srijith S
- 5 Sri. Baiju V
- 6 Dr. Roxy M S
- 7 Dr. Dedhila Devadathan
- 8 Dr. Vidya S
- 9 Smt. Rehna R
- 10 Dr. Sajeev Kumar G
- 11 Sri. Vipin Kumar C

The following points were discussed in the meeting.

- The BoS has decided to initiate the following courses in the academic year 2018-19.
- 1. MICROPROCESSOR AND MICROCONTROLLER (MM)
- 2. PYTHON PROGRAMMING (PY)
- The syllabus for the above courses was designed by the committee by considering the global needs and demand of the market.
- It was decided to conduct the above courses for more than 30 hours.
- The committee has framed the time- table apart from the academic hours.
- The Python Programming Classes will start on September 10 2018 and ends on Jan 10 2019.

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Kollam-681 001

- While running the course there are some expenditures such remuneration for the trainers, stationery and miscellaneous. Therefore, the minimum affordable fees should be charged.
- The committee has suggested to appoint the trainers for the above courses.
- The minimum attendance for the successful completion of the course is decided to be 75%.
- The minimum marks required for the qualification is decided to be 50 marks for Theory and 25 marks for Practicals.
- The submission of the assignment is compulsory for the successful completion of the course.
- The board has decided to initiate the certificate courses as per the demand of the stakeholders and approval of I.Q.A.C.

Sri. Baiju V proposed vote of thanks and the meeting was ended.

Dept of Physics

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Principal Sree Narayana College COLLEGE Kollam

The following faculties are selected as trainers for Certificate courses (Microprocessor and Microcontrollers, Python Programming) Conducted by Department of Physics, Sree Narayana College, Kollam in the academic year 2019-20.

,	List of Teachers - Microprocessor and Microcontrollers							
	Name	College	Mobile no:	mail id				
1	Dr.G.Sajeevkumar	SNCK	9447064602	sajeevkumarg@gmail.com				
2	Sri. Srijith S	SNCK	9633500425	srijithkeanu@gmail.com				
3	Smt.Asitha L.R	SNCK	9995213881	asitha85@gmail.com				
4	Sri. Baiju V	SNCK	8281856366	baijuvkollam@gmail.com				
5	Sri Safir T	TKMCAS	9946635799	stkphy@gmail.com				

	List o	f Teachers	- Python Prog	ramming
	Name	College	Mobile no:	mail id
1	Dr.Dedhila Devadathan	SNCK	9446454083	dedhila@gmail.com
2	Dr Roxy M S	SNCK	9495243029	roxyms@gmail.com
3	Dr Vidya S	SNCK	9745464525	vidyaasnair@gmail.com
4	Smt Rehna R	SNCK	8281328303	rehnaraju@gmail.com
5	Sri Safir T	TKMCAS	9946635799	stkphy@gmail.com



# SREE NARAYANA COLLEGE, KOLLAM DEPARTMENT OF PHYSICS CERTIFICATE COURSE TIME TABLE

Name: Microprocessor and Microcontroller (MM)

**Duration: 30 Hrs** 

Start Date: SEP 05 2019

End Date: JAN 05 2020

Day /03:30 Pm to 04:30 Pm	Handled by
Monday	Rehna R
Tuesday	Practical Hours (Rehna R and Dedhila)
Wednesday	Asitha L.R
Thursday	Srijith S
Friday	Dr. Muhammed Salim / Aparna L R





# SREE NARAYANA COLLEGE ,KOLLAM DEPARTMENT OF PHYSICS CERTIFICATE COURSE

Name: Microprocessor and Microcontroller (MM)

Duration: 30 Hrs

Start Date: Sept 05 2019

End Date: Jan 05 2020

			LIST OF STUDENTS	8		
SI. No.	Name of the student	Gender	Email ID	Class	Mobile No:	Admission *
1	AISWARYA RAJ	П	aiswaryaraj906@gmail.com	M.Sc. PHYSICS	9633077906	2019
2	ANAGHA M L	F	anaghamurukesh@gmail.com	M.Sc. PHYSICS	9447808813	2019
ω	ANJANA RAJENDRAN	F	anjanarajendran426@gmail. com	M.Sc. PHYSICS		2019
4	ARCHANA C S	F	archanachithra97@gmail.com	M.Sc. PHYSICS	9895148991	2019
5	ARUN A G	M	arunagnandanam@gmail.com	M.Sc. PHYSICS	7025452167	2019
6	ARUNDHATHI ANIL	F	arundhathyanil319@gmail.com	M.Sc. PHYSICS	8113895528	2019
7	ATHIRA SURESH B	F	athirasureshb4@gmail.com	M.Sc. PHYSICS	9446042547	2019
8	DRISYA SHAJIKUMAR	F	drisyarajesh418@gmail.com	M.Sc. PHYSICS	9995239452	2019
9	GOPIKA B R	F	gopikavaishnavam98@gmail.com	M.Sc. PHYSICS	9747420076	2019
10	KEERTHANA S LAL	F	keerthanaslal98@gmail.com	M.Sc. PHYSICS	9400181597	2019

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E	NEENU NASSAR	ਸ	neenunassar123@gmail.com	M.Sc. PHYSICS	9188590418
12	NIDHI JOTHI	Ħ	nidhijothi@gmail.com	M.Sc. PHYSICS	9495420282
13	NIKITA MARIA GEORGE	Ŧ	nikitamariageorge@gmail.com	M.Sc. PHYSICS	9995954947
14	PREETHU P	F	ppreethu054@gmail.com	M.Sc. PHYSICS	9400211494
15	PRESITHA PRENRAJ	Ħ	presithaprenraj@gmail.com	M.Sc. PHYSICS	9567967119
1			((	ration Till SICS	930/90/119
16	RAHUL S R	X	rahulchithira30@gmail.com	M.Sc. PHYSICS	8547095266
17	REVATHY G.S	Ŧ	revathygs081998@gmail.com	M.Sc. PHYSICS	8075179186
18	SANIYA S.M	F	sanayazindagi@gmail.com	M Sc PHYSICS	8120117275
19	SIVAKUMAR V S	Δ .			A
				TATUBE LITT SICS	/2108/6460
20	SYAMJITH M	X	syamk491@gmail.com	M.Sc. PHYSICS	9526508036
21	VAISAKH K S	X	ksvaisakh60@gmail.com	M.Sc. PHYSICS	7558805713 2019
22	VAISHNAVI G	F	vaishgvaishnavi@gmail.com	M.Sc. PHYSICS	7561087381 2019
23	VISMAYA S	'A	vismaya21sugathan@gmail.com	M.Sc. PHYSICS	9656024624 2019
24	Akhil K	X	akhilkallada868@gmail com	DITVELCE	
35			Distriction	B.SC. FHYSICS	/02511/019 2017
22	Ananda Mohan	X	anandamohan 9999@gmail.com	B.Sc. PHYSICS	8592004568 2017
26	Ananthu A	M	ananthuanil 1998@gmail.com	B.Sc. PHYSICS	8893453548 2017
27	Bhagya R		reghuammu45@gmail.com	B.Sc. PHYSICS	8078226177 2017
					1

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2017		B.Sc. PHYSICS	athulyaniyathi@gmail.com	F	Athulya M	30
2017	PHYSICS 8848893060 2017	B.Sc. PHYSICS	kaazhad15@gmail.com	M	K A Azhad	29
2017	PHYSICS 8086858707 2017	B.Sc. PHYSICS	govindbalu141@gmail.com	M	Govind C S	28



### **CERTIFICATE COURSE**

Name: Microprocessor and Microcontroller (MM)

Duration: 30 Hrs

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VAISAKH K S

VAISHNAVI G

Ananda Mohan

VISMAYA S

Ananthu A

Govind CS

K A Azhad

Athulya M

Bhagya R

Akhil K

Start Date: Sept 05 2019 End Date: Jan 05 2020

### ATTENDENCE STATEMENT Sl. No. Name of the student % of Attendence Register No: 80 AISWARYA RAJ MM19001 Auswerne 87 2 ANAGHA M L MM19002 DNAGHA MM19003 90 3 ANJANA RAJENDRAN 88 4 ARCHANA C S MM19004 whome 89 MM19005 5 ARUN A G ARUNDHATHI ANIL MM19006 80 6 Asserral 7 ATHIRA SURESH B MM19007 86 MM19008 87 8 DRISYA SHAJIKUMAR 9 GOPIKA B R MM19009 88 80 10 KEERTHANA S LAL MM19010 NEENU NASSAR MM19011 90 11 94 12 NIDHI JOTHI MM19012 89 NIKITA MARIA GEORGE MM19013 13 90 MM19014 14 PREETHU P 95 15 PRESITHA PRENRAJ MM19015 90 RAHUL S R MM19016 16 99 17 REVATHY G.S MM19017 98 18 SANIYA S.M MM19018 19 SIVAKUMAR V S MM19019 89 98 SYAMJITH M MM19020 20

MM19021

MM19022

MM19023

MM19024

MM19025

MM19026

MM19027

MM19028

MM19029

MM19030





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## **CERTIFICATE COURSE**

Name:

Microprocessor and Microcontroller (MM)

**Duration: 30 Hrs** 

Start Date: Sept 05 2019

**End Date:** 

Jan 5 2020

### MARK LIST

Sl. No.	Name of the student			Obtained		
SI. 140.	Name of the student	Theory (50)	Practical (40)	Assignment (10)	Total (100)	1.00
1	AISWARYA RAJ	35	35	10	80	distayor
2	ANAGHA M L	32	34	10	76	Ara
3	ANJANA RAJENDRAN	35	36	10	81	And
4	ARCHANA C S	37	35	10	82	Arochans.
5	ARUN A G	38	34	10	82	Dues (
6	ARUNDHATHI ANIL	45	36	10	91 -	A
7	ATHIRA SURESH B	44	35	10	89	Show
8	DRISYA SHAJIKUMAR	32	38	10	80	Pare : D
9	GOPIKA B R	46	34	10	90	19
10	KEERTHANA S LAL	47	36	10	93	Kedlet
11	NEENU NASSAR	48	35	10	93	Joseph Jan
12	NIDHI JOTHI	43	38	10	91	Walhins
13	NIKITA MARIA GEORGE	44	35	10	89 -	able
14	PREETHU P	34	32	10	76	Reother
15	PRESITHA PRENRAJ	33	33	10	76	presithat
16	RAHUL S R	38	33	10	81 <	Jahrel
17	REVATHY G.S	33	35	10	78	sevathy
18	SANIYA S.M	45	39	10	94	aniyas.
19	SIVAKUMAR V S	42	35	10	87	Sivakumu )
20	SYAMJITH M	39	34	10	83	Suamith
21	VAISAKH K S	41	34	10	85	alisakht
22	VAISHNAVI G	43	33	10	86	reaishnar
23	VISMAYA S	34	32	10	76	ikmaya Akholk
24	Akhil K	32	34	10	76	Akhold
25	Ananda Mohan	40	32	10	82	Anandal
26	Ananthu A	35	33	10	78	Inanth
27	Bhagya R	48	40	10	98 (	Bhayy
28	Govind C S	44	39	10	93	Bhayy
29	K A Azhad	46	39	10	95	Ashal
30	Athulya M	43	40	10	93	Alhulyal

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# Minutes of the Meeting

The minutes of the meeting of the BoS of Certificate courses was held on 10th February, 2020 in the Department of Physics, Sree Narayana College, Kollam at 10.00 a.m.The following members were present for the meeting.

		7 Smt. Rehna R
1	Smt. Asitha L R	8 Smt. SaranyaBabu
2	Sri. Srijith S	9 Sri. Vipin Kumar C
3	Sri. Baiju V	10 Smt. Aparna L.R
4	Dr. Roxy M S	11. Dr. Muhammed Salim
5	Dr. Dedhila Devadathan	12Dr.P. K. Manoj
6	Dr. Vidya S	13. Sri. Saffir T K

The following points were discussed in the meeting.

- It was decided to conduct the above courses for more than 30 hours through online platform Google meet.
- The committee has framed the time- table for the online classes.
- The Committee decided to charge minimum fees for the courses.
- The committee suggested to strictly follow the Covid protocol during practical classes.
- The committee has suggested to consider the suggestions of the stake holders about the timing of the class.
- The minimum attendance for the successful completion of the course is decided to be 75%.
- The minimum marks required for the qualification is decided to be 25 marks for Theory and 20 marks for Practicals.
- The submission of the assignment is compulsory for the successful completion of the course.

Sri. Saffir P.K proposed vote of thanks and the meeting was ended.

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### Minutes of the Meeting

The minutes of the meeting of the BoS of Certificate courses was held on Jan 01<sup>st</sup>, 2019 in the Department of Physics, Sree Narayana College, Kollam at 10.00 a.m.

- 1 Dr. Sunilkumar R
- 2 Dr. Sankar S
- 3 Smt. Asitha L R
- 4 Sri. Srijith S
- 5 Sri. Baiju V
- 6 Dr. Roxy M S
- 7 Dr. Dedhila Devadathan
- 8 Dr. Vidya S
- 9 Smt. Rehna R
- 10 Dr. G. Sajeevkumar
- 11 Sri. Vipin Kumar C

The following points were discussed in the meeting.

- The BoS has decided to initiate the following courses in the academic year 2018-19.
- There will be no change in the syllabus for the above courses.
- The committee has framed the time- table apart from the academic hours.
- The Committee decided to charge minimum fees for the courses.
- The Microprocessor and Microcontrollers Classes will start on Jan 10 2019 and ends on May 08 2019.
- The committee has suggested to consider the suggestions of the stake holders about the timing of the class.
- The committee has suggested to appoint the trainers for the above courses.

And I

- The minimum attendance for the successful completion of the course is decided to be 75%.
- The minimum marks required for the qualification is decided to be 50 marks for Theory and 25 marks for Practicals.
- The submission of the assignment is compulsory for the successful completion of the course.
- The board has decided to initiate the certificate courses and approval of I.Q.A.C.

Sri. Baiju V proposed vote of thanks and the meeting was ended.

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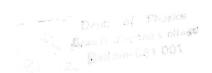
# REPORT ON CERTIFICATE COURSE IN MICROPROCESSOR AND MICROCONTROLLER AND PYTHON PROGRAMMING

# DEPARTMENT OF PHYSICS

# **ACADEMIC YEAR 2019-20**

- The BoS has decided to initiate the following courses in the academic year 2019-20.
- 1. MICROPROCESSOR AND MICROCONTROLLER (MM)
- 2. PYTHON PROGRAMMING (PY)
- The syllabus for the above courses was designed by the committee by considering the global needs and demand of the market.
- It was decided to conduct the above courses for more than 30 hours.
- The committee has framed the time- table apart from the academic hours.
- The committee suggested to strictly follow the Covid protocol during practical classes.
- While running the course there are some expenditures such remuneration for the trainers, stationery and miscellaneous. Therefore, the minimum affordable fees should be charged.
- The committee has suggested to appoint the trainers for the above courses.
- The Classes and tests were conducted through Online Platform.
- The board has decided to initiate the certificate courses as per the demand of the stakeholders and approval of I.Q.A.C.

The Python Fundamentals for Beginners course offers a base knowledge of various Python concepts, starting from its introduction. The Course was intended to learn about variables in programming, decision-making statements, looping statements, algorithmic approaches, object-oriented programming concepts, and functions which are the essential elements that contribute to structuring any programming language. After inheritance, students completed an assignment and an exam to test their knowledge to complete the course and earned a free certificate. After completing this free, self-paced, beginner's guide to Python, you can embark on your **Software and** 



IT career with a professional Post Graduate certificate and learn various concepts with millions of aspirants across the globe.

Duration: 08 hrs Practical and 32 hrs theory

The students have completed 30 sessions including theory and practical during the period January 2020 - May2020.

Total Students Successfully Completed: 31

Microprocessor and Microcontroller course will start with a discussion on a simple microprocessor, 8085. Understanding this architecture is the basis to follow any other complex CPU architecture. It will be followed by a complete overview of a range of microcontrollers covering 8051,8086, I/O interfacing and microcontrollers. The hardware intricacies of these processors and their programming will be covered. Students developed an in-depth understanding of the structure and operations of Microprocessors & Microcontrollers, and interfacing techniques and basic understanding of hardware and software interaction and integration.

Duration: 08 hrs Practical and 32 hrs theory

The students have completed 30 sessions including theory and practical during the period September 2019- January 2020.

Total Students Successfully Completed: 30

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Principal
Principal
Sree Narayana College
Kollam



# Sree Narayana College, Kollam

**Re-Accredited by NAAC with "A" Grade**Affiliated to the University of Kerala
Kollam - 691 001, Kerala, S. India

Tel: 0474 - 2741793, Fax: 0474-2766857

Ref: PL/8031 / 2022

website www.snckollam.ac.in e-mail: snckollam@gmail.com

Dr. Sunilkumar R. M.A, M.Phil., Ph.D Principal

Mob No.: 9387500997

Email: sunilanena@gmail.com

# Certificate

Certified that **Dr. Mohammed Salim, Assistant Professor, Department of Physics, TKM College of Arts and Science, Kollam,** is a member of the Board of studies for framing the syllabus and curriculum for the certificate courses offered by the Department of Physics of this college during the academic year 2019-20

PRINCIPAL