



CERTIFICATE COURSE ON
MICROPROCESSOR AND MICROCONTROLLER
CONDUCTED BY DEPARTMENT OF PHYSICS

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.

Starts on 05/09/201
Ends on 05/01/202
Available Seats: 25
Admission starts o
16/08/2020.

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

1. 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

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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 μ P 8085 kit.
2. Develop assembly language program for multiplication of two numbers using μ 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.

Surthar Haraji
Principal
Sree Narayana College
Kollam



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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_home1_1.htm

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SREE NARAYANA COLLEGE, KOLLAM

DEPARTMENT OF PHYSICS

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, Sree Narayana College, Kollam
9	Dr. Vidya S	Assistant Professor, Department of Physics, Sree Narayana College, Kollam

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10	Smt. Rehna R	Assistant Professor, Department of Physics, Sree Narayana College, Kollam
11	Smt. Saranya Babu	Assistant Professor, Department of Physics, 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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Principal
Sree Narayana College
Kollam



SREE NARAYANA COLLEGE, KOLLAM

DEPARTMENT OF PHYSICS

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 courses as 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
Principal
Sree Narayana College
Kollam



[Signature]

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SREE NARAYANA COLLEGE, KOLLAM**DEPARTMENT OF PHYSICS****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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- 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.



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SREE NARAYANA COLLEGE, KOLLAM

DEPARTMENT OF PHYSICS

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 of Teachers - Python Programming				
	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



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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

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SREE NARAYANA COLLEGE, KOLLAM
DEPARTMENT OF PHYSICS

CERTIFICATE COURSE

Name : Microprocessor and Microcontroller (MIM)

Duration : 30 Hrs

Start Date: Sept 05 2019

End Date: Jan 05 2020

LIST OF STUDENTS

Sl. No.	Name of the student	Gender	Email ID	Class	Mobile No:	Year of Admission
1	AISWARYA RAJ	F	aiswaryaraj906@gmail.com	M.Sc. PHYSICS	9633077906	2019
2	ANAGHA M L	F	anaghamurukesh@gmail.com	M.Sc. PHYSICS	9447808813	2019
3	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	arundhathyani1319@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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11	NEENU NASSAR	F	neenuassar123@gmail.com	M.Sc. PHYSICS	9188590418	2019
12	NIDHI JOTHI	F	nidhijothi@gmail.com	M.Sc. PHYSICS	9495420282	2019
13	NIKITA MARIA GEORGE	F	nikitamariageorge@gmail.com	M.Sc. PHYSICS	9995954947	2019
14	PREETHU P	F	ppreethu054@gmail.com	M.Sc. PHYSICS	9400211494	2019
15	PRESITHA PRENRAJ	F	presithaprenraj@gmail.com	M.Sc. PHYSICS	9567967119	2019
16	RAHUL S R	M	rahulchithira30@gmail.com	M.Sc. PHYSICS	8547095266	2019
17	REVATHY G.S	F	revathygs081998@gmail.com	M.Sc. PHYSICS	8075179186	2019
18	SANIYA S.M	F	sanayazindagi@gmail.com	M.Sc. PHYSICS	8129117275	2019
19	SIVAKUMAR V S	M	vssivakumar98@gmail.com	M.Sc. PHYSICS	7510876460	2019
20	SYAMJITH M	M	syamk491@gmail.com	M.Sc. PHYSICS	9526508036	2019
21	VAISAKH K S	M	ksvaisakh60@gmail.com	M.Sc. PHYSICS	7558805713	2019
22	VAISHNAVI G	F	vaishgvaishnavi@gmail.com	M.Sc. PHYSICS	7561087381	2019
23	VISMAYA S	F	vismaya21sugathan@gmail.com	M.Sc. PHYSICS	9656024624	2019
24	Akhil K	M	akhilkallada868@gmail.com	B.Sc. PHYSICS	7025117019	2017
25	Ananda Mohan	M	anandamohan9999@gmail.com	B.Sc. PHYSICS	8592004568	2017
26	Ananthu A	M	ananthuanil1998@gmail.com	B.Sc. PHYSICS	8893453548	2017
27	Bhagya R	F	reghuanmmu45@gmail.com	B.Sc. PHYSICS	8078226177	2017

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

Dist. of Police
 K. S. Narayana College
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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

ATTENDANCE STATEMENT

Sl. No.	Name of the student	Register No:	% of Attendance
1	AISWARYA RAJ	MM19001	80
2	ANAGHA M L	MM19002	87
3	ANJANA RAJENDRAN	MM19003	90
4	ARCHANA C S	MM19004	88
5	ARUN A G	MM19005	89
6	ARUNDHATHI ANIL	MM19006	80
7	ATHIRA SURESH B	MM19007	86
8	DRISYA SHAJIKUMAR	MM19008	87
9	GOPIKA B R	MM19009	88
10	KEERTHANA S LAL	MM19010	80
11	NEENU NASSAR	MM19011	90
12	NIDHI JOTHI	MM19012	94
13	NIKITA MARIA GEORGE	MM19013	89
14	PREETHU P	MM19014	90
15	PRESITHA PRENRAJ	MM19015	95
16	RAHUL S R	MM19016	90
17	REVATHY G.S	MM19017	99
18	SANIYA S.M	MM19018	98
19	SIVAKUMAR V S	MM19019	89
20	SYAMJITH M	MM19020	98
21	VAISAKH K S	MM19021	90
22	VAISHNAVI G	MM19022	95
23	VISMAYA S	MM19023	82
24	Akhil K	MM19024	84
25	Ananda Mohan	MM19025	88.7
26	Ananthu A	MM19026	80
27	Bhagya R	MM19027	89
28	Govind C S	MM19028	90
29	K A Azhad	MM19029	88
30	Athulya M	MM19030	85

Aiswarya
 Anagha
 Anjana
 Archana
 Arun
 Arundhati
 Athira
 Drisya
 Gopi
 Keerthana
 Neenu
 Nidhi
 Nikita
 Preethu
 Presitha
 Rahul
 Revathy
 Saniya
 Sivakumar
 Syamjith
 Vaisakh
 Vaishnavi
 Vismaya
 Akhil
 Ananda
 Ananthu
 Bhagya
 Govind
 K.A. Azhad
 Athulya

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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 5 2020

MARK LIST

Sl. No.	Name of the student	Marks Obtained			
		Theory (50)	Practical (40)	Assignment (10)	Total (100)
1	AISWARYA RAJ	35	35	10	80
2	ANAGHA M L	32	34	10	76
3	ANJANA RAJENDRAN	35	36	10	81
4	ARCHANA C S	37	35	10	82
5	ARUN A G	38	34	10	82
6	ARUNDHATHI ANIL	45	36	10	91
7	ATHIRA SURESH B	44	35	10	89
8	DRISYA SHAJIKUMAR	32	38	10	80
9	GOPIKA B R	46	34	10	90
10	KEERTHANA S LAL	47	36	10	93
11	NEENU NASSAR	48	35	10	93
12	NIDHI JOTHI	43	38	10	91
13	NIKITA MARIA GEORGE	44	35	10	89
14	PREETHU P	34	32	10	76
15	PRESITHA PRENRAJ	33	33	10	76
16	RAHUL S R	38	33	10	81
17	REVATHY G.S	33	35	10	78
18	SANIYA S.M	45	39	10	94
19	SIVAKUMAR V S	42	35	10	87
20	SYAMJITH M	39	34	10	83
21	VAISAKH K S	41	34	10	85
22	VAISHNAVI G	43	33	10	86
23	VISMAYA S	34	32	10	76
24	Akhil K	32	34	10	76
25	Ananda Mohan	40	32	10	82
26	Ananthu A	35	33	10	78
27	Bhagya R	48	40	10	98
28	Govind C S	44	39	10	93
29	K A Azhad	46	39	10	95
30	Athulya M	43	40	10	93

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Dept of Physics
 Sree Narayana College
 Kollam-691 001

SREE NARAYANA COLLEGE, KOLLAM

DEPARTMENT OF PHYSICS

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. Saranya Babu
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	12	Dr. 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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Kollam-691 001

SREE NARAYANA COLLEGE, KOLLAM
DEPARTMENT OF PHYSICS

Minutes of the Meeting

The minutes of the meeting of the BoS of Certificate courses was held on Jan 01st, 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.



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Kollam-691 001

- 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.



Dept. of Finance
Greenfield College
Kadur - 001 001

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 - May 2020.

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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Re-Accredited by NAAC with "A" Grade

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Dr. Sunilkumar R.

M.A, M.Phil., Ph.D

Principal

Mob No.: 9387500997

Email : sunilanena@gmail.com

Ref: PL/8031 / 2022

Date
05.01.2022

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