



***SREE NARAYANA COLLEGE KOLLAM***

***CERTIFICATE COURSE ON TINKERCAD***

***CONDUCTED BY DEPARTMENT OF PHYSICS***

Tinkercad Circuits is a popular digital and analog electronics simulator for hobbyists, students, and makers. Tinkercad Circuits offers an intuitive interface that lets users drag and drop components into their virtual electronic design. Besides creating Arduino-based designs, it's also possible to simulate other analog and digital circuits that don't use a microcontroller (MCU) or development board.

***Starts on 10/10/2021***

***Ends on 10/12/2021***

***Available Seats: 25***

***Admission starts on 02/10/2021.***

For more Information, contact ASITHA L.R (Coordinator)

Ph. No: 9995213881



**DEPARTMENT OF PHYSICS**  
**CERTIFICATE COURSE- TINKERCAD**

**SYLLABUS- 30 Hrs**

**Module 1: Learning Basic Circuits (5 Hrs)**

Focus on fundamentals, such as breadboard wiring, Ohm's law, and series and parallel circuits.

**Module 2: Exploring Circuits (7 Hrs)**

Introduce electronics (LEDs, batteries, hobby motors, resistors, and switches), Basic circuit connections: Controlling LEDs and DC motors, Understand the switches, pushbuttons, and battery connections.

**Module 3: Arduino in Tinkercad (7 Hrs)**

Introduction to Arduino and Robotics, Control multiple motors with Arduino using scratch programming, Connect the IR sensor and photo-resistor to make an obstacle avoider robot, Use the Ultrasonic sensor to make a robot and home security system, Use servo motors to make robotics Arms.

**Module 4: Teaching Circuits with Tinkercad (6 Hrs)**

Simple project discussion using the integration of multiple sensors.

**Module 5: PROJECTS (5 Hrs)**

- 1.Arduino--Getting-started-with-Tinkercad-Simulation: how to build circuits, code
- 2.TinkerCad-Traffic-Light-Simulation: create own traffic light system.
- 3.Using Loops in programming the Arduino using Tinkercad: learn how to use for Loops
- 4.TinkerCad-Knight-Rider-Simulation: create iconic strobe effect with sound
- 5.TinkerCad-Parking-Sensor-Simulation with flashing LEDs and sounds and distance sensor
- 6.Tinkercad Night Light Simulation with LDR and push switch.
7. Tinkercad Electronic Dice with Push button
8. Tinkercad Creating and displaying characters using an LCD

## SREE NARAYANA COLLEGE, KOLLAM

### DEPARTMENT OF PHYSICS

The following faculties are selected as trainers for Certificate courses TINKERCAD (TC) Conducted by Department of Physics, Sree Narayana College, Kollam in the academic year 2021-22.

<b>List of Teachers - TINKERCAD</b>				
	<b>Name</b>	<b>College</b>	<b>Mobile no:</b>	<b>mail id</b>
1	Dr.Dedhila Devadathan	SNCK	9446454083	dedhila@gmail.com
2	Sri. Srijith S	SNCK	9633500425	<a href="mailto:srijithkeanu@gmail.com">srijithkeanu@gmail.com</a>
3	Smt.Asitha L.R	SNCK	9995213881	<a href="mailto:asitha85@gmail.com">asitha85@gmail.com</a>
4	Sri. Baiju V	SNCK	8281856366	<a href="mailto:baijuvkollam@gmail.com">baijuvkollam@gmail.com</a>
5	Smt Rehna R	SNCK	8281328303	rehnaraju@gmail.com
6	Dr Roxy M S	SNCK	9495243029	roxyms@gmail.com

## **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 course TINKERCAD (TC) Conducted by Department of Physics, Sree Narayana College, Kollam in the academic year 2021-22.

	<b>Name</b>	<b>Designation</b>
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. Bajju 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
10	Smt. Rehna R	Assistant Professor, Department of Physics, Sree Narayana College, Kollam

**SREE NARAYANA COLLEGE, KOLLAM**

**DEPARTMENT OF PHYSICS**

**CERTIFICATE COURSE TIME TABLE**

**Name: TINKERCAD (TC)**

**Duration: 30 Hrs**

**Start Date: SEPT 10 2021**

**End Date: DEC 10 2022**

<b>DAY /08:15 AM TO 09:15 AM</b>	<b>HANDLED BY</b>
<b>MONDAY</b>	<b>REHNA R</b>
<b>TUESDAY</b>	<b>DEDHILA DEVADATHAN</b>
<b>WEDNESDAY</b>	<b>ASITHA L R</b>
<b>THURSDAY</b>	<b>SRIJITH S</b>
<b>FRIDAY</b>	<b>PRACTICAL HOURS ( Dr. ROXY M S/ BAIJU V )</b>

**SREE NARAYANA COLLEGE ,KOLLAM**  
**DEPARTMENT OF PHYSICS**  
**CERTIFICATE COURSE**

Name : **TINKERCAD (TC)**

Duration : **30 Hrs**

Start Date **SEPT 10 2022**

<b>LIST OF STUDENTS</b>				
<b>Sl. No.</b>	<b>Name of the student</b>	<b>Gender</b>	<b>Class</b>	<b>Year of Admission</b>
1	ARYA S G	F	B.Sc. Physics	2020
2	GANESH S KUMAR	M	B.Sc. Physics	2020
3	GOWRI PRADEEP	F	B.Sc. Physics	2020
4	GOWTHAM BABU	M	B.Sc. Physics	2020
5	JEEVAN J	M	B.Sc. Physics	2020
6	JITHIN J K	M	B.Sc. Physics	2020
7	KARTHIKSIVAN	M	B.Sc. Physics	2020
8	KRIPASON V P	M	B.Sc. Physics	2020
9	KRISHNA MANIKANDAN	M	B.Sc. Physics	2020
10	LEKSHMI. R	F	B.Sc. Physics	2020
11	MADHAV S	M	B.Sc. Physics	2020
12	P H HARIDARSHANA	F	M.Sc. Physics	2021
13	JOSNA GEORGE	F	M.Sc. Physics	2021
14	ADITHYA S	F	M.Sc. Physics	2021
15	REMYA R KRISHNAN	F	M.Sc. Physics	2021
16	ANASWARA S T	F	M.Sc. Physics	2021
17	SALINI VYASAN	F	M.Sc. Physics	2021
18	GAYATHRI P S	F	M.Sc. Physics	2021
19	AKHILA.A.L	F	M.Sc. Physics	2021
20	SNEHA R P	F	M.Sc. Physics	2021
21	ASWAJITH A	F	M.Sc. Physics	2021
22	ARYA CHANDRAN S	F	M.Sc. Physics	2021
23	ARDRA R KURUP	F	M.Sc. Physics	2021

**SREE NARAYANA COLLEGE ,KOLLAM**  
**DEPARTMENT OF PHYSICS**  
**CERTIFICATE COURSE**

Name : **TINKERCAD (TC)**

Duration : 30 Hrs

Start Date: SEPT 10 2022

End Date: DEC 10 2022

MARK LIST					MARKS		
Sl. No.	Enrollment No.	Name of the student	Name of the Department	Completed (Yes or No)	THEORY	PRACTICALS	TOTAL
					MAX: 50	MAX: 25	MAX: 75
1	TC01	ARYA S G	Physics	Yes	40	23	63
2	TC02	GANESH S KUMAR	Physics	Yes	41	23	64
3	TC03	GOWRI PRADEEP	Physics	Yes	42	22	64
4	TC04	GOWTHAM BABU	Physics	Yes	44	23	67
5	TC05	JEEVAN J	Physics	Yes	40	23	63
6	TC06	JITHIN J K	Physics	Yes	36	24	60
7	TC07	KARTHIKSIVAN	Physics	Yes	37	23	60
8	TC08	KRIPASON V P	Physics	Yes	39	23	62
9	TC09	KRISHNA MANIKANDAN	Physics	Yes	40	24	64
10	TC10	LEKSHMI. R	Physics	Yes	41	24	65
11	TC11	MADHAV S	Physics	Yes	41	23	64
12	TC12	P H HARIDARSHANA	Physics	Yes	38	22	60
13	TC13	JOSNA GEORGE	Physics	Yes	39	23	62
14	TC14	ADITHYA S	Physics	Yes	43	24	67
15	TC15	REMYA R KRISHNAN	Physics	Yes	45	23	68
16	TC16	ANASWARA S T	Physics	Yes	41	24	65
17	TC17	SALINI VYASAN	Physics	Yes	40	23	63
18	TC18	GAYATHRI P S	Physics	Yes	38	23	61
19	TC19	AKHILA.A.L	Physics	Yes	35	24	59
20	TC20	SNEHA R P	Physics	Yes	36	23	59
21	TC21	ASWAJITH A	Physics	Yes	39	23	62
22	TC22	ARYA CHANDRAN S	Physics	Yes	40	22	62

23	TC23	ARDRA R KURUP	Physics	Yes	36	21	57
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**DEPARTMENT OF PHYSICS****CERTIFICATE COURSE****Name : TINKERCAD (TC)****Duration : 30 Hrs****Start Date: SEPT 10 2022****End Date: DEC 10 2022****ATTENDENCE STATEMENT**

<b>SI No</b>	<b>Name of the Student</b>	<b>Register No:</b>	<b>% of Attendance</b>
1	ARYA S G	TC01	91
2	GANESH S KUMAR	TC02	92
3	GOWRI PRADEEP	TC03	90
4	GOWTHAM BABU	TC04	91
5	JEEVAN J	TC05	90
6	JITHIN J K	TC06	88
7	KARTHIKSIVAN	TC07	87
8	KRIPASON V P	TC08	88
9	KRISHNA MANIKANDAN	TC09	89
10	LEKSHMI. R	TC10	90
11	MADHAV S	TC11	90
12	P H HARIDARSHANA	TC12	91
13	JOSNA GEORGE	TC13	91
14	ADITHYA S	TC14	82
15	REMYA R KRISHNAN	TC15	80
16	ANASWARA S T	TC16	82
17	SALINI VYASAN	TC17	90
18	GAYATHRI P S	TC18	87
19	AKHILA.A.L	TC19	88
20	SNEHA R P	TC20	89
21	ASWAJITH A	TC21	90
22	ARYA CHANDRAN S	TC22	91
23	ARDRA R KURUP	TC23	85

# SREE NARAYANA COLLEGE KOLLAM

CERTIFICATE COURSE 2021-22

Department:

PHYSICS

Name of Certificate course:

TINKERCAD

No. of students enrolled:

23

No. of students passed:

23

Sl No.	Candidate Code	Name of Candidate	Department	Completed or not
1	63021132001	ARYA S G	PHYSICS	YES
2	63021132002	GANESH S KUMAR	PHYSICS	YES
3	63021132003	GOWRI PRADEEP	PHYSICS	YES
4	63021132004	GOWTHAM BABU	PHYSICS	YES
5	63021132005	JEEVAN J	PHYSICS	YES
6	63021132006	JITHIN J K	PHYSICS	YES
7	63021132007	KARTHIKSIVAN	PHYSICS	YES
8	63021132008	KRIPASON V P	PHYSICS	YES
9	63021132009	KRISHNA MANIKANDAN	PHYSICS	YES
10	63021132010	LEKSHMI. R	PHYSICS	YES
11	63021132011	MADHAV S	PHYSICS	YES
12	63021132012	P H HARIDARSHANA	PHYSICS	YES
13	63021132013	JOSNA GEORGE	PHYSICS	YES
14	63021132014	ADITHYA S	PHYSICS	YES
15	63021132015	REMYA R KRISHNAN	PHYSICS	YES
16	63021132016	ANASWARA S T	PHYSICS	YES
17	63021132017	SALINI VYASAN	PHYSICS	YES
18	63021132018	GAYATHRI P S	PHYSICS	YES
19	63021132019	AKHILA.A.L	PHYSICS	YES
20	63021132020	SNEHA R P	PHYSICS	YES
21	63021132021	ASWAJITH A	PHYSICS	YES
22	63021132022	ARYA CHANDRAN S	PHYSICS	YES
23	63021132023	ARDRA R KURUP	PHYSICS	YES

# **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 17th August, 2021 in the Department of Physics, Sree Narayana College, Kollam at 10.00 a.m. The following members were present for the meeting.

- 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 Smt. Saranya Babu

The following points were discussed in the meeting.

- The BoS has decided to initiate the following courses in the academic year 2021-22.

#### **1. TINKERCAD (TC)**

- 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 Classes will start on September 10 2021 and ends on DEC 10 2021.
- 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. Srijith S proposed vote of thanks and the meeting was ended.

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

## **DEPARTMENT OF PHYSICS**

### **ACADEMIC YEAR 2021-22**

Tinkercad circuits is a fully functional Arduino+ Circuit simulator that runs in a web browser Tinkercad provides a "breadboard view" with graphics that look like the physical circuit parts you would use in real life, which is a much more beginner-friendly approach. The ability to simulate an Arduino and run code directly in the web browser is an added bonus. While simulations are never a complete replacement for real hardware, they're certainly better than nothing if students don't have any other options. Thankfully, we were able to distribute physical Arduino kits for students to use at home during the COVID-19 pandemic. However, we found that Teachers and students had a very difficult time debugging circuits over google meet. It's hard to hold a breadboard up to a webcam and see what's going on. We had students rebuild their circuits in Tinkercad and then screen share in google meet. This makes it much easier to see all the connections and help debug. So, Tinkercad can be a good supplement even if students have hardware kits available for the class.

The BoS has decided to initiate the following courses in the academic year 2021-22.

#### **TINKERCAD (TC)**

- 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.
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- The Classes will start on September 10 2021 and ends on DEC 10 2021.
- 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.

Duration: 05hrs Project and 25 hrs theory

The students have completed 30 sessions including theory and practical during the period September 2021- December 2021.

Total Students Successfully Completed: 23

