



Arduino

Guidelines for Online Learning

Section-I Learner's General Point of Consideration

- ◆ The learner must get familiar with the Session's Interface and understand:
 - ▶ How Session is going on?
 - ▶ How to Toggle window between the sessions and Software while performing activities or wherever instructions provided
 - ▶ Login to TinkerCad circuit Software
 - ▶ How to perform any Quizzes & Activities
- ◆ Lesson Plans must also be reviewed in-advance to meet all the requirements before the sessions start
- ◆ It is necessary to visit all the reference links to reinforce the concepts

Section-II System Specification

- A) Operating System
 - ▷ Windows: Windows 7(64-bit editor), Windows 8(64-bit editor),,
 - ▷ Windows 8.1(64-bit editor),, Windows 10 (64-bit editor), or newer
 - ▷ Mac: OS X / macOS 12.0 or later
- B) Supported Browser
 - ▷ Google Chrome
 - ▷ Firefox
 - ▷ Safari
 - ▷ Microsoft Edge

Section-III Internet Connectivity

- ◆ The first and foremost requirement is good network connectivity for the smooth running of classes
- ◆ Lack of internet connectivity may cause:
 - ▶ Audio/Visual Disturbances
 - ▶ Some Quiz may not work properly
 - ▶ Captions or Images may not be displayed
 - ▶ Activity's Instruction may not be clear
 - ▶ Software glitch may also occur

Section-IV Digital Equipment

- ◆ Laptop or Desktop/ Android/MAC
- ◆ Headphones (in-case of Requirements)

Section-V How to Perform “Arduino Session”

- ◆ Once you login into the session, please go through the “Lesson Plans” for each day
- ◆ Lesson Plans are prepared for Each Day with the following details:
 - ▶ Estimated Time Requirements & Objective of the Session
 - ▶ Learning Resources Link
 - ▶ Software Links and other important links for the session
 - ▶ Details of Learning Materials if required
- ◆ Once the session starts reloading again and audio/video is paused due to bad internet connectivity, then refresh the page
- ◆ Our Arduino sessions contain the Topics based on objective of Session, Summary, Assignment & Knowledge Check Quiz. It also contains the “Steps of Instructions” for performing Activity
- ◆ Activity’s Instructions and Knowledge Check Quiz must not be skipped
- ◆ Performing Activities enables Learners to understand the logics and concepts applied in Arduino programming and circuit connection.
- ◆ Number of Interactions performed under Knowledge Check Round reflects Day-wise Performance of students through Results
- ◆ For performing any activities, the toggling of a window between instructions and software must be followed as mentioned on the Activities slides.
- ◆ Time Requirements may vary Day-wise or Activity wise depending upon the Topic Covered. However, the Estimated Time for the Session is 60 Mins.
- ◆ Each Day Assets links are provided on the session itself for Arduino programming or performing any Assignment

Section-VI “Software Guidelines”

- ◆ Tinkercad Circuits allows anyone to virtually create and program Arduino projects without the need for physical hardware.
- ◆ This allows students to access their designs out of school and also to share their designs with the global Tinkercad community.
- ◆ TinkerCAD is a free online service for creating basic developing digital pro- to types of electronic components.
- ◆ This allows students to design circuits, program micro-controllers and incorporate the electronics directly
- ◆ In order to perform any Arduino activity, you need to Login to the software and create your own account.
To get create or login to your account you must required a valid E-mail ID.
- ◆ On the right side of your screen, you’ll see a group of drag-and-drop electronic components.
- ◆ On top, you can search and filter through an impressive number of available components: There’s everything from LEDs to integrated circuits (ICs), and even a few instrument tools.
- ◆ The top toolbar starting on the left gives you the general operations to rotate, delete, and even make notes on your different components.

- ◆ Once you have a programmable component in your design, you can open the “Code” viewer by clicking on the button at the top right of the toolbar.
- ◆ Currently, the only two devices available are the Arduino Uno R3 and the ATTiny. (The ATTiny is a more limited and miniaturized Arduino.)
- ◆ The programming area is a simplified integrated development environment (IDE) that makes programming the Arduino very straightforward.
- ◆ Once activities performed, saving of file is mandatory
- ◆ Effort has been done to cater specific tools day-wise and construct the circuits based on define tool and program libraries for building the Strong Concepts in electronic
- ◆ For better clarity, in each session, all the steps from scratch have been incorporated

Note: Estimated Time Duration for Completion of Course is 3 Months