

## Online delivery of course content in Semester I, 2020-21

September 23, 2020

Teaching for Semester I, 2020-21 will start with students located off-campus and the course content delivery will be online. The last part of Semester II, 2019-20 was also conducted online and some recommendations on the delivery of the online course content were made. For Semester I, 2020-21, a Committee is constituted to facilitate online teaching. The Committee has organized two workshops as on date, and some more are planned in near future on different aspects of online teaching. Video recordings of the workshops are available on the ETSC page of the Institute website (<http://etsc.iitd.ac.in/resources.html>). The first workshop introduced the platforms (Impartus and MS teams) for online teaching, Moodle as a medium for quiz and evaluation, and also the use of GradeScope for evaluation. The second workshop focused on the experiences of a few faculty members on online teaching in Semester II, 2019-20, and suggestions for online delivery for course content. Workshops on hardware devices useful for online teaching are also planned.

This document includes:

- A summary of the Senate resolutions on online teaching relevant to the delivery of course content and evaluation for the online semesters,
- information on platforms for online course delivery, and
- suggested tools for video recording of lectures.

Kindly note that the following section on online teaching is extracted from the minutes of the 212<sup>th</sup> Senate meeting held on 29.07.2020

(<https://owncloud.iitd.ac.in/nextcloud/index.php/s/MgxDjs2TeHMk3Ne#pdfviewer>). In case of any discrepancy with the contents under item 1 below, the Senate minutes will prevail.

### 1. A summary of the Senate resolutions on online teaching (for Semester I, 2020-21)

#### a. Schedule

- i. The semester schedule has 60 teaching days (instead of 70 teaching days) and the remaining 10 days of course content (corresponding to 2 lecture hours per lecture credit, 2 tutorial hours per group per tutorial credit of the course) needs to be delivered in asynchronous mode.
- ii. Semester schedule has six-day teaching week.
- iii. Semester schedule has dates for one Minor examination only.

#### b. Course content delivery

- i. Teaching may be done using live online sessions (synchronous mode) or in asynchronous mode by providing video recorded lectures/ tutorials.
- ii. Live sessions should adhere to course slot timing to avoid clashes.

- iii. Live sessions are also to be recorded and provided (on Impartus platform or any other convenient platform selected by faculty course coordinator ensuring availability to all students) for asynchronous access by students.
- iv. In addition to video lectures, audio track of the video lectures and pdf file of the lecture notes (white board writing, slides, etc.) may also be uploaded on the Impartus platform to cater to students with limited internet access.
- v. Some live sessions be conducted in a course, even if the course is being delivered in asynchronous mode. These may be used for content delivery, clearing doubts on content shared in asynchronous mode.
- vi. Doubt clearing/ help sessions are conducted at suitable, regular frequency. It is desirable to have at least some of these as live video sessions, but they can also be done using other platforms, chats and in asynchronous mode. A record of all such teaching activities be maintained by the faculty.
- vii. In case the course is being delivered in asynchronous mode, it is essential that the week-to-week calendar be adhered to, and the uploading of lectures should be suitably paced to be in line with the semester calendar.

c. Evaluations

- i. The course evaluation policy be announced (preferably on the first day of class).
- ii. Attendance may be maintained by faculty/TAs, as required, but cannot be a part of course evaluation and grading policy.
- iii. The pass requirement for a non-Major project course done on credit basis ('D' grade) or on Audit basis ('NP' grade) is to be fixed at 30% marks.

In view of the above resolution the following additional points are recommended:

- The first class be conducted as a live online session and the course policy is announced, even if the course is run in asynchronous mode.
- The course evaluation policy is also populated on ERP system and also communicated through course email. In addition, Moodle may also be used for communication of course policy.
- As the students are not physically coming to classes and the list of students may change during add-drop period (and in some cases later also due to special circumstances), it is a good idea to frequently check the updated course registration list in the ERP system.

**2. Information on platforms for online course delivery**

- a. Institute supports two platforms for course content delivery: Impartus and MS Teams. A course coordinator may use any other convenient mode. However, in such cases the course content should also be uploaded on Impartus, for students to access it through Moodle, and also for record-keeping.

- b. The access to the Impartus platform for the students is through Moodle platform. All the students registered in all the courses are mapped in Moodle. A course coordinator can also use Moodle platform to upload as well as to access the lecture contents. Instruction for uploading the content through Moodle is given in **Annexure 1**. It can also be done by directly logging on the Impartus platform via the ID provided by ETSC. A tutorial on using Impartus platform for both live and asynchronous delivery of course content is included in the first workshop by the online teaching committee and is available at <http://etsc.iitd.ac.in/resources.html>
- c. The video access to the students on Impartus platform will not be downloadable and will be available as live streaming at their time of their convenience. The platform used for the access of video lectures supports up to 40000 live streaming, whereas ~8000 – 9000 students are doing coursework, so bandwidth issues are not expected at the source.
- d. A video tutorial on using MS Teams for delivery of course content is included in the first workshop by the online teaching committee and is available at <http://etsc.iitd.ac.in/resources.html>.

In addition to the above, the online teaching committee and ETSC are working to add more information/ improvements to the above platforms. All such developments will be communicated by email and will be provided on ETSC website.

### 3. Suggested tools for video recording of lectures

- a. Use of Impartus for recording off-line lectures is included in the first workshop by the online teaching committee and is available at <http://etsc.iitd.ac.in/resources.html>.
- b. Some of the ways to prepare the video/ audio files for off-line course content are given in **Annexure 2**. This includes recording a lecture as you scroll through slides in PowerPoint (or on Apple Keynote or in LibreOffice), as well as creating an online video content (video of lecture delivery) using an open source software called OBS.
- c. Each lecture content should be made available in three different formats (video, audio, and pdf formats) to ensure students with different degrees of access to the internet (and bandwidth) are able to access the content in an appropriate format.
  - i. The audio file can be extracted from the video file using either open source software like ‘VLC’ or the link given in **Annexure 2**. The pdf file is either the scanned notes (if using paper to write), pptx (converted to pdf), or the content written on the screen.
  - ii. For the benefit of the students using the audio file, it is a good idea to frequently refer to the position on the notes (pdf file), like page number, equation number etc., during the lecture delivery.
- d. Kindly note that copyrighted material must not be included or converted directly to a pdf

(for instance, part of a book including insertion of a graph, a figure or a schematic, etc. in the notes). In such cases, it may be better to provide link to some online resource, if available.

- e. Links to third-party contents can also be used, but proper care should be taken to ensure that the content are strictly in accordance with the course template and there are no issues with respect to the notations, sign conventions etc. This could include NPTEL lectures, either delivered by faculty themselves or other experts in the subject area from IITD or other IITs/ IISc. Third party content, if used, must be complemented with write-up or recordings from faculty members themselves regarding the nature of the content and which topic/module in the course (as per course template) the third party content refers to. Due acknowledgement must be given to all third party content.

Write to Mr. Sandeep Sharma, ETSC at [ird12448@cse.iitd.ac.in](mailto:ird12448@cse.iitd.ac.in) for any issues with Impartus platform.

The ways given in **Annexure 2** are only suggestions and faculty members can choose other ways to develop the content. The only requirement is on the file types (mp4, mp3 and pdf).

## Annexure 1

### Instructions for Access to Moodle & Impartus:

#### Step 1:

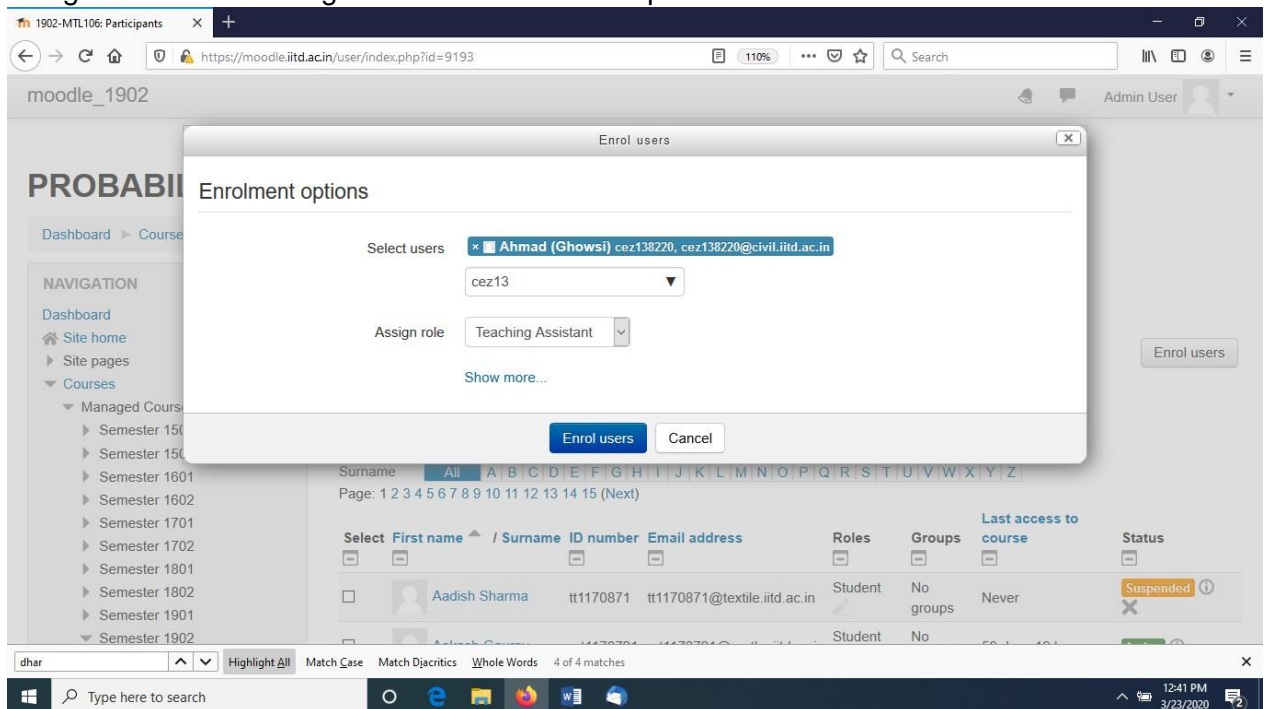
Go to Institute web site ([www.iitd.ac.in](http://www.iitd.ac.in)) → Students Activities → Moodle

(login with Kerberos/Internet Id and Password)

Once inside, click on the panel with your course name and starting with number 1902.

#### Step 2 (Adding Teaching Assistant for the Course):

- Choose the course
- Click <Participants> (left side of the screen)
- Click <Enrol Users> (Right-top of the screen)
- Now you can choose the users id (Faculty and Students of the Institute) and also select Assign role as <Teaching Assistant> from the dropdown menu.

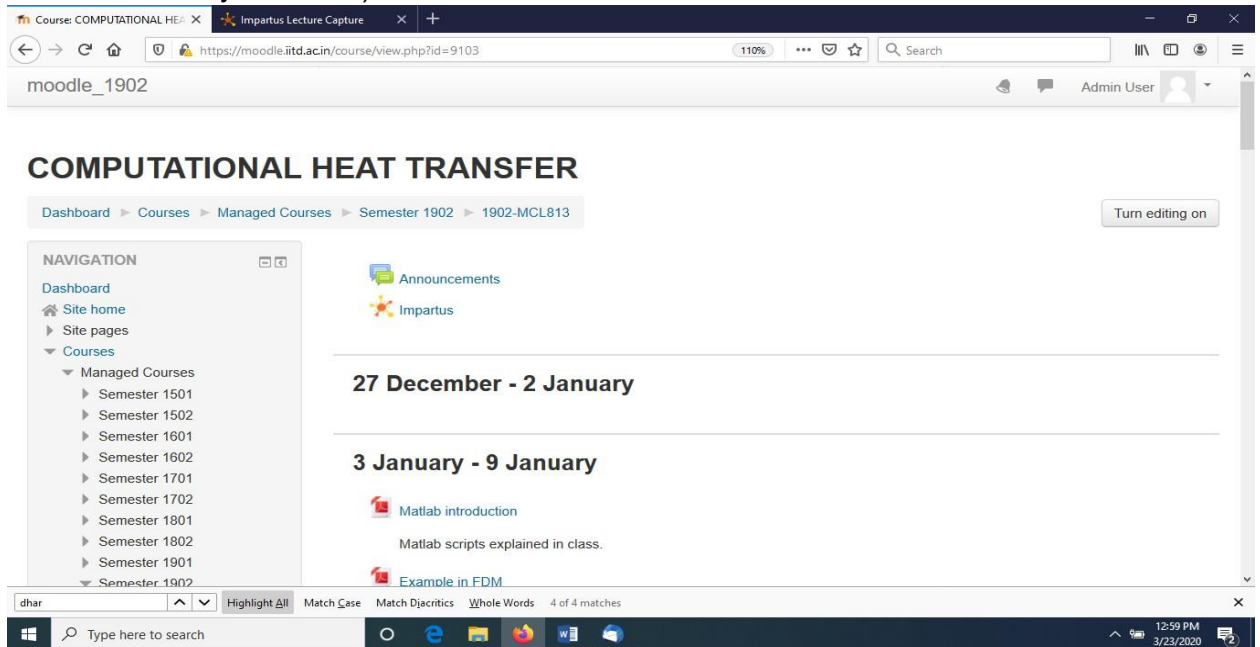


The screenshot shows a Moodle course page for 'moodle\_1902'. A dialog box titled 'Enrol users' is open, displaying 'Enrolment options'. The 'Select users' field contains 'Ahmad (Ghowsi) cez138220, cez138220@civil.iitd.ac.in'. Below it, a dropdown menu shows 'cez13'. The 'Assign role' dropdown is set to 'Teaching Assistant'. There are 'Enrol users' and 'Cancel' buttons at the bottom of the dialog. In the background, a table of users is visible, with columns for 'Select', 'First name / Surname', 'ID number', 'Email address', 'Roles', 'Groups', 'Last access to course', and 'Status'. One user, 'Aadish Sharma', is listed with ID 'tt1170871' and email 'tt1170871@textile.iitd.ac.in', with a role of 'Student' and status of 'Suspended'.


- Click <Enrol users> to add TAs in your course.

### Step 3 (Adding Video lectures, Audio lecture and PDF file):

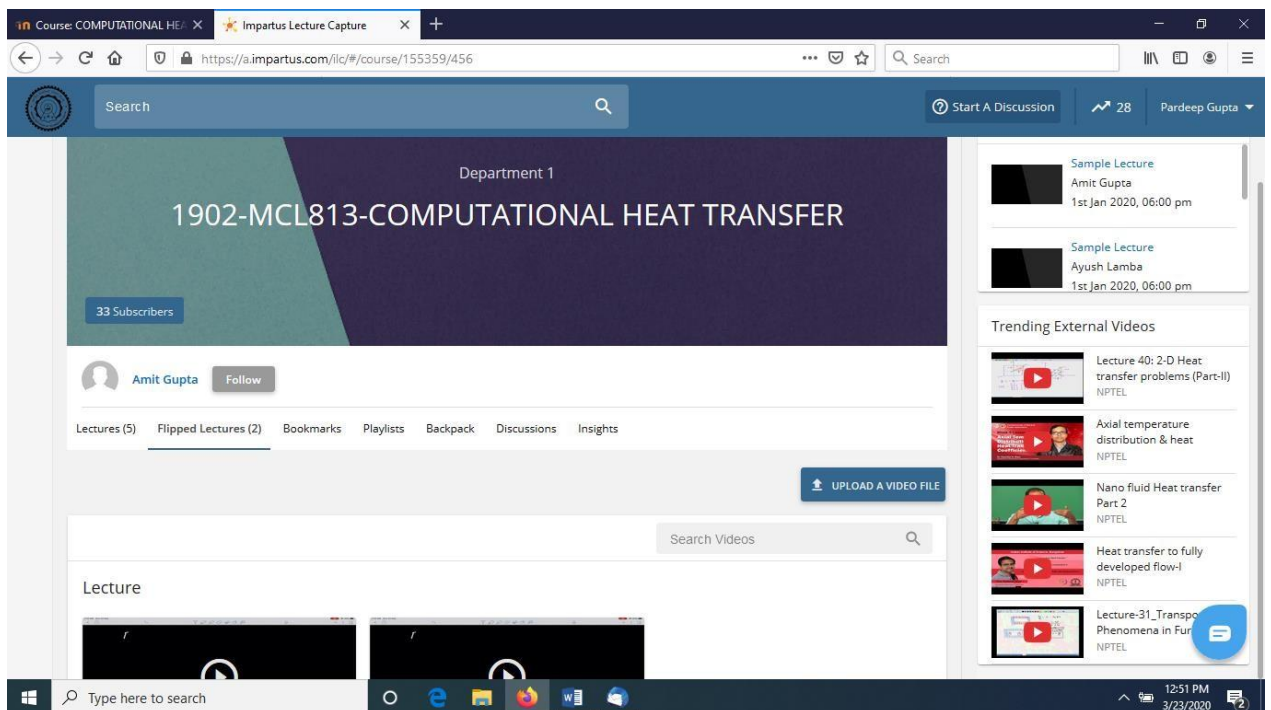
- a) After Login into Moodle → Choose the course and you will see the following (under your course under “My Courses”):



The screenshot shows a Moodle course page for 'COMPUTATIONAL HEAT TRANSFER'. The breadcrumb trail is 'Dashboard > Courses > Managed Courses > Semester 1902 > 1902-MCL813'. A navigation menu on the left lists various semesters from 1501 to 1902. The main content area features an 'Announcements' section with the Impartus logo and two dates: '27 December - 2 January' and '3 January - 9 January'. Below the dates, there are two announcements: 'Matlab introduction' with the text 'Matlab scripts explained in class.' and 'Examble in FDM'. The browser address bar shows 'https://moodle.iitd.ac.in/course/view.php?id=9103'.

- b) Click <Impartus>  .

You will be shown the following screen:



The screenshot shows the Impartus course page for '1902-MCL813-COMPUTATIONAL HEAT TRANSFER'. The page header includes a search bar, 'Start A Discussion' button, and user information for 'Pardeep Gupta'. The main content area features a profile for 'Amit Gupta' with a 'Follow' button and a list of course items: 'Lectures (5)', 'Flipped Lectures (2)', 'Bookmarks', 'Playlists', 'Backpack', 'Discussions', and 'Insights'. There is an 'UPLOAD A VIDEO FILE' button. Below this is a 'Search Videos' bar and a 'Lecture' section with two video thumbnails. The right sidebar contains a list of 'Sample Lecture' items and a 'Trending External Videos' section with several video thumbnails. The browser address bar shows 'https://a.impartus.com/ilc/#/course/155359/456'.

- c) Click <Flipped Lectures> panel to upload video file. Fill in the panel as per instructions. You can set the date the Video File is to become available to Students.
- d) Click <Backpack> to upload Audio file and PDF file. This tab can be used to upload your scanned (handwritten) lecture notes, PDF files of documents (Word, PowerPoint etc.), Tutorial Sheets etc.
- e) You can track the Usage Analytics by clicking Insights.

## Annexure 2

### Creating and hosting lectures on Moodle

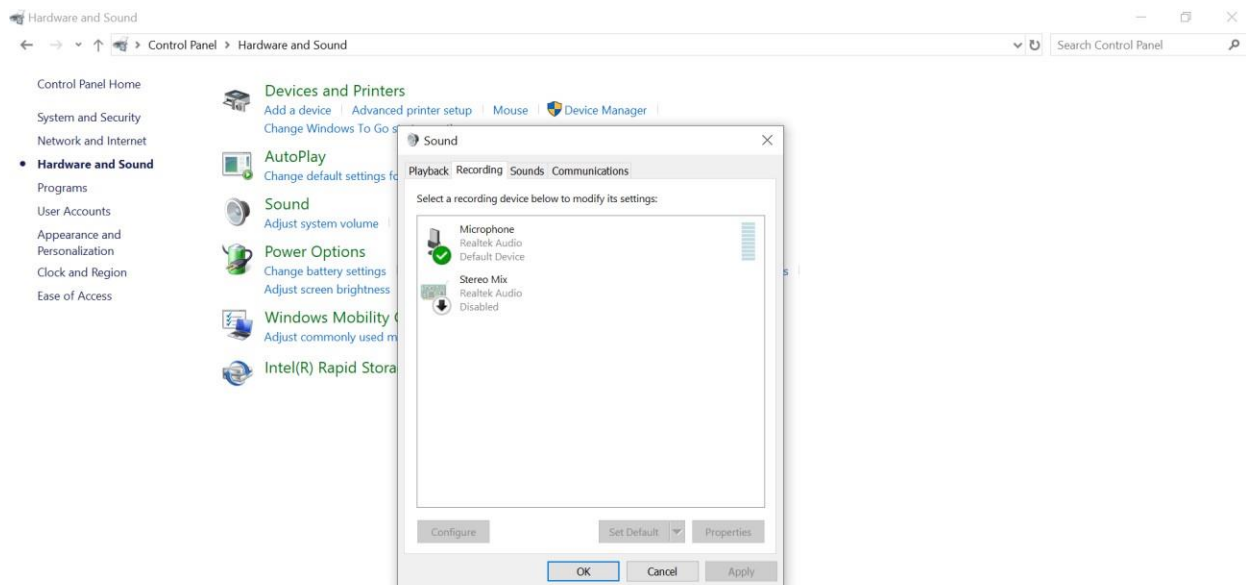
This document describes two ways of creating video lectures for sharing with students through Moodle. The lectures will be available for streaming only (i.e., downloads and link sharing will not be possible).

Once the video is created, faculty will be required to extract the audio content from the video recording file (say, Lecture.mp4) using any of the two simple methods given below.

- 1) Using open source package such as VLC. In this, simply import Lecture.mp4 into VLC and then 'convert' to mp3 and save as 'Lecture.mp3', or
- 2) Open the link <http://10.17.10.2/> in your browser and drop or upload the video file. The audio file will be extracted and should begin downloading once the process is complete. Using Microsoft PowerPoint to create video recording\*

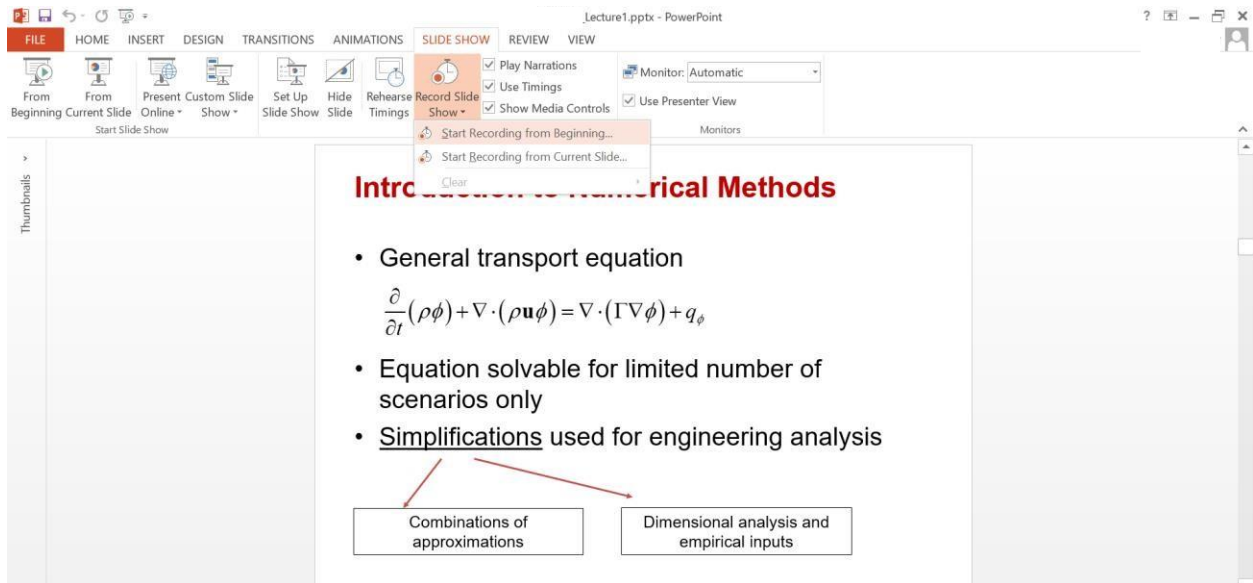
\*The same functionality is present in Apple Keynote, and can be activated in LibreOffice Impress or Beamer/LaTeX using a combination of plugins and external tools.

**Step 1:** For this, make sure the microphone on your computer is working. This can be checked through Control Panel>Hardware and Sound>Sound>Recording. The Microphone bars should appear dark green when you speak.



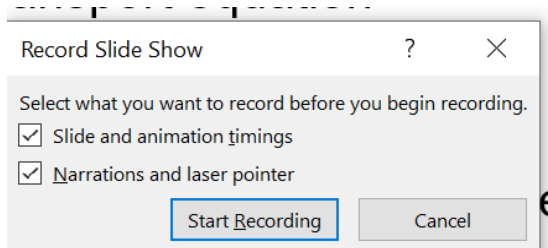


**Step 2:** Now switch to the powerpoint window. Go to the 'Slideshow' tab on the top ribbon and choose 'Record Slide Show > Start Recording from the Beginning option'.



Additionally you can attach a stylus or digital pencil to enable markings on the file as the recording is made. The use of a mouse as a pointer will also help students to follow the lecture.

**Step 3:** After you press 'Start Recording from Beginning', the following dialog box will appear.



Press 'Start Recording' now and everything spoken will start to be recorded until you stop or exit.

**Step 4:** Once finished, save the powerpoint file as .mp4 file.

**Step 5:** Upload and share the .mp4 video file with students through moodle.

Some helpful links on this process are:

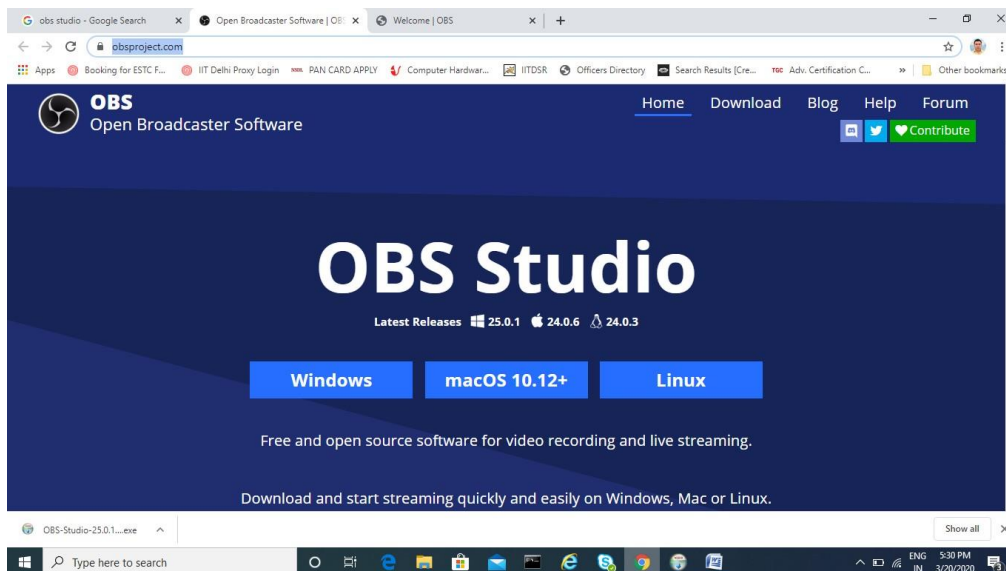
- 1) [https://www.youtube.com/watch?v=Dxhxvg\\_zUQ](https://www.youtube.com/watch?v=Dxhxvg_zUQ)

2) <https://www.youtube.com/watch?v=selYsj94RQg>

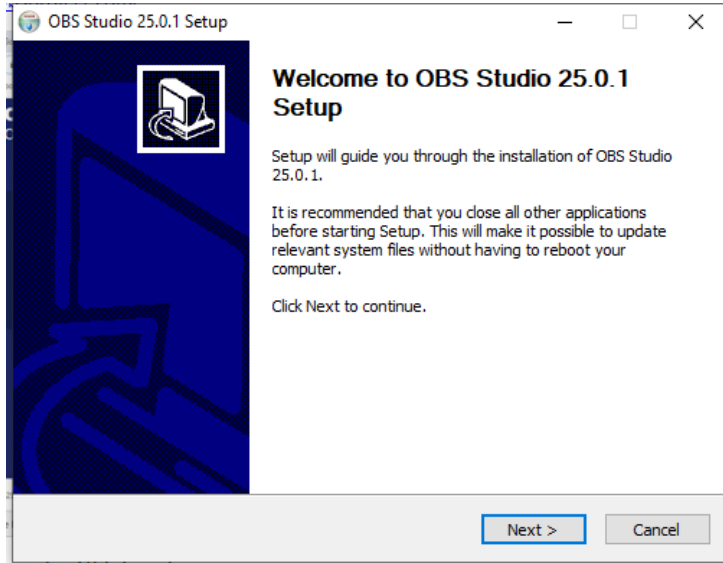
# Using OBS for creating video lectures with screen and audio recording

OBS is an open-source software that can be used for recording video lectures by capturing screen content on Windows, Mac or Linux machines. Please follow the steps given below to start installation on Windows (for MacOS, please refer to <https://www.support.com/how-to/how-to-install-obs-streaming-software-on-a-mac-12835>; for Linux, <https://obsproject.com/wiki/install-instructions#linux>).

**Step 1:** Download OBS from <https://obsproject.com/>

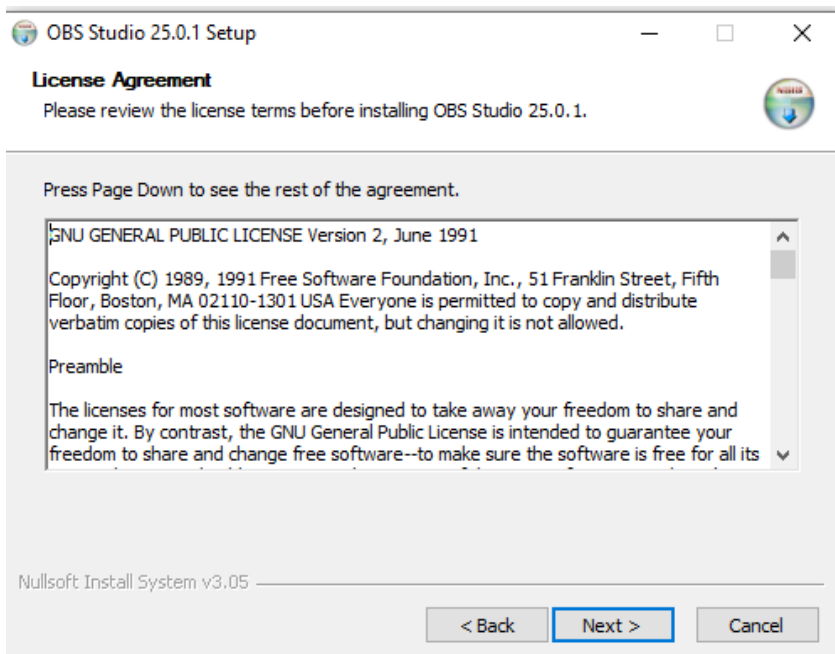


**Step 2:** After downloading the setup file, run it to install it.

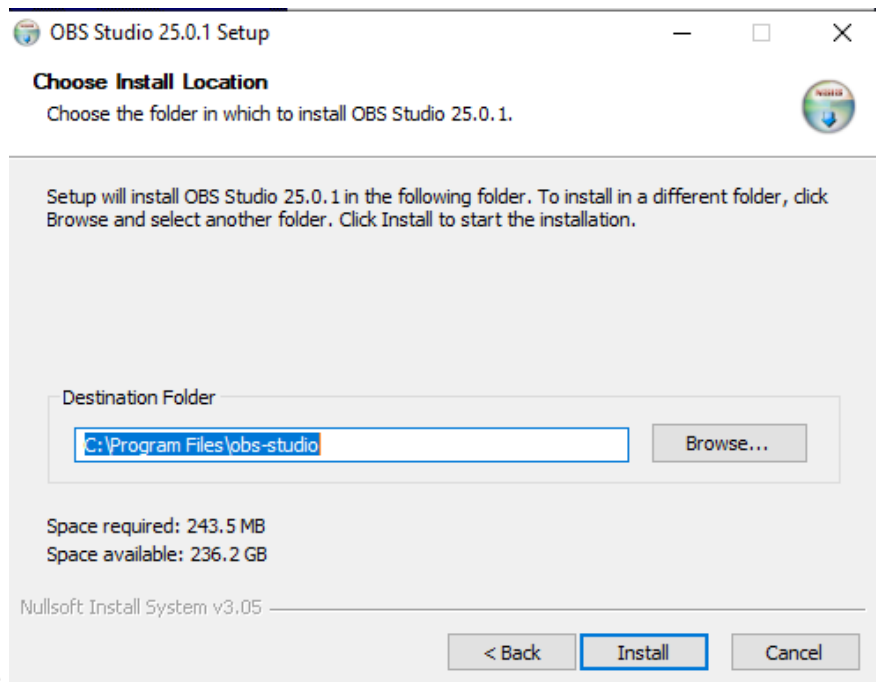


Press Next to continue.

**Step 3:** Press Next

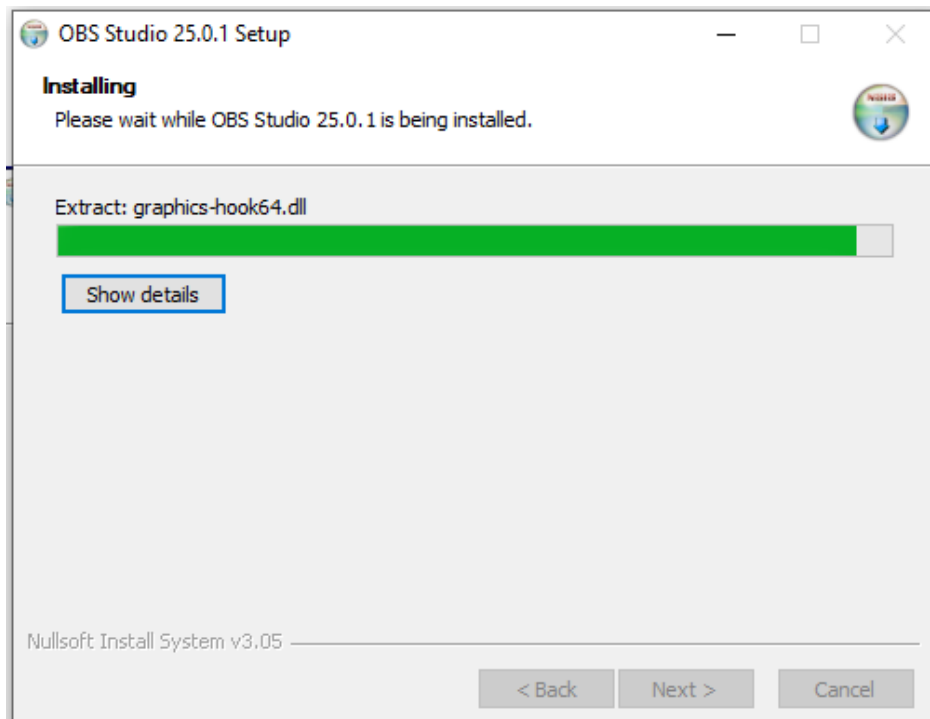


**Step 4:** Choose an installation folder. The default will also work. Press Install to



continue.

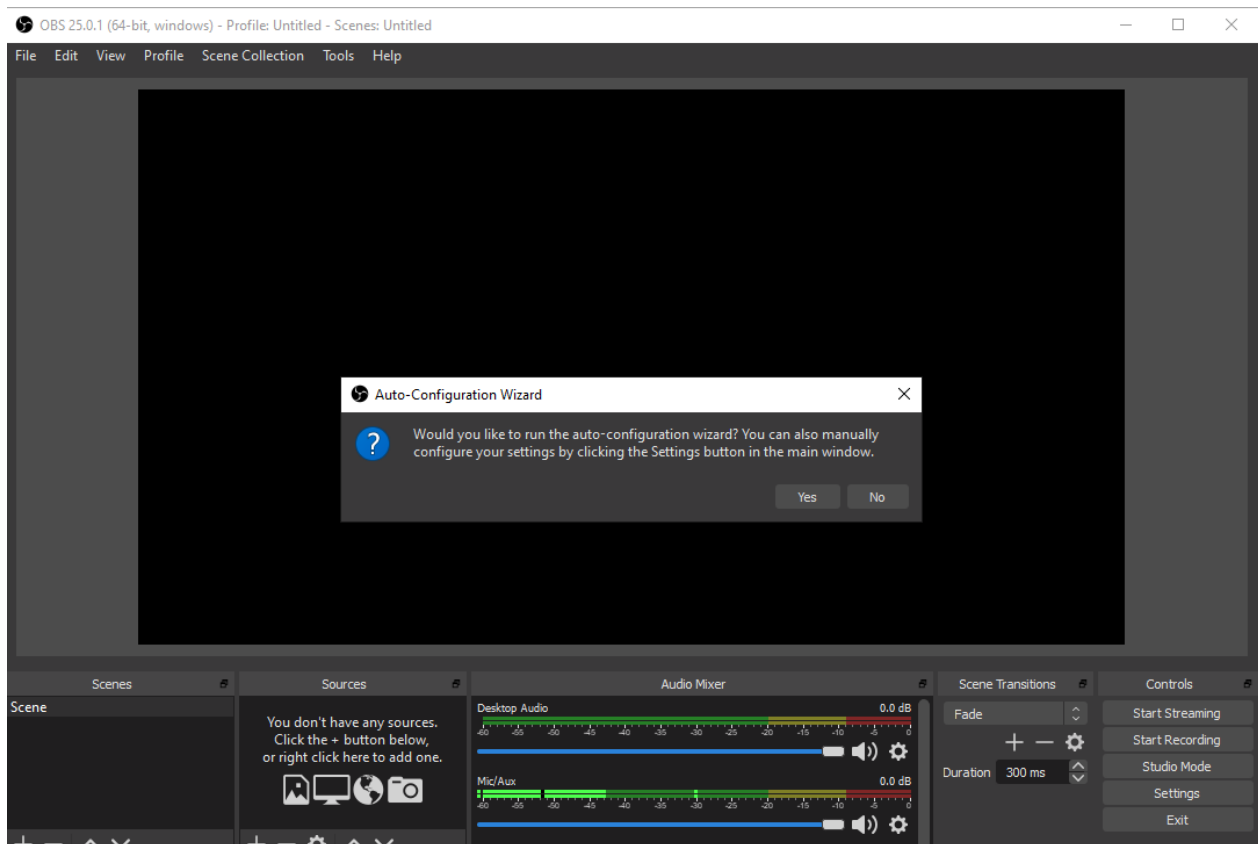
**Step 5:** The installation status will appear as shown below.



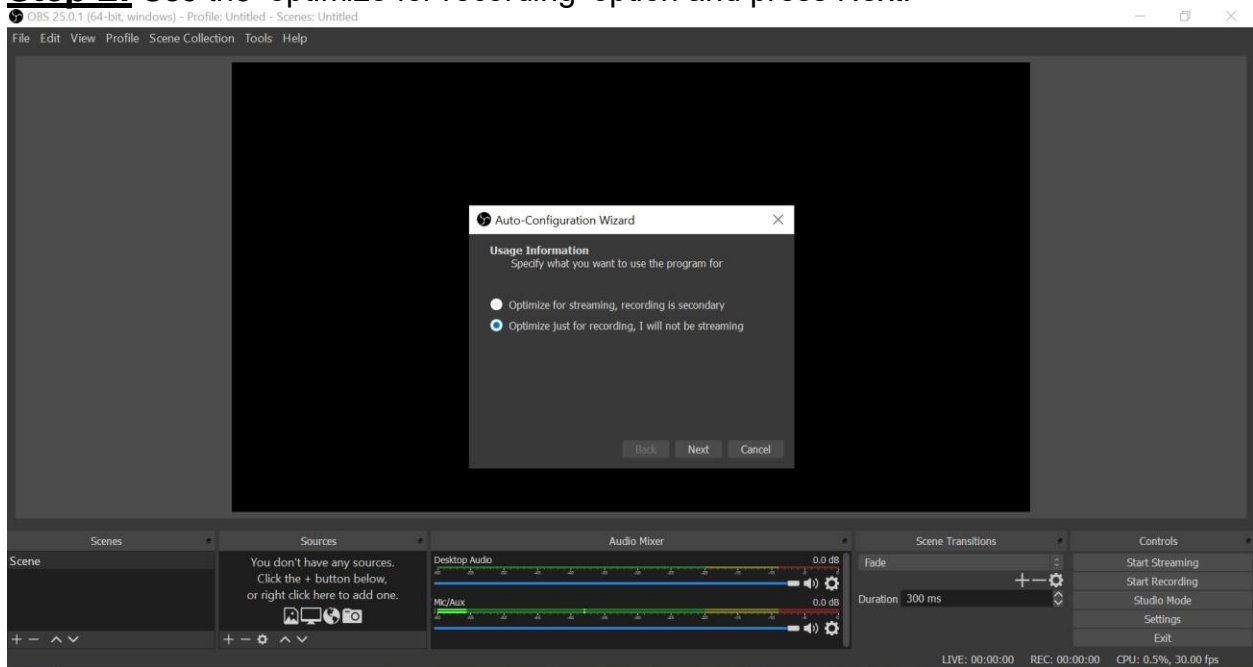
**Step 6:** Press Finish to complete installation.

## Steps to configure OBS for recording videos

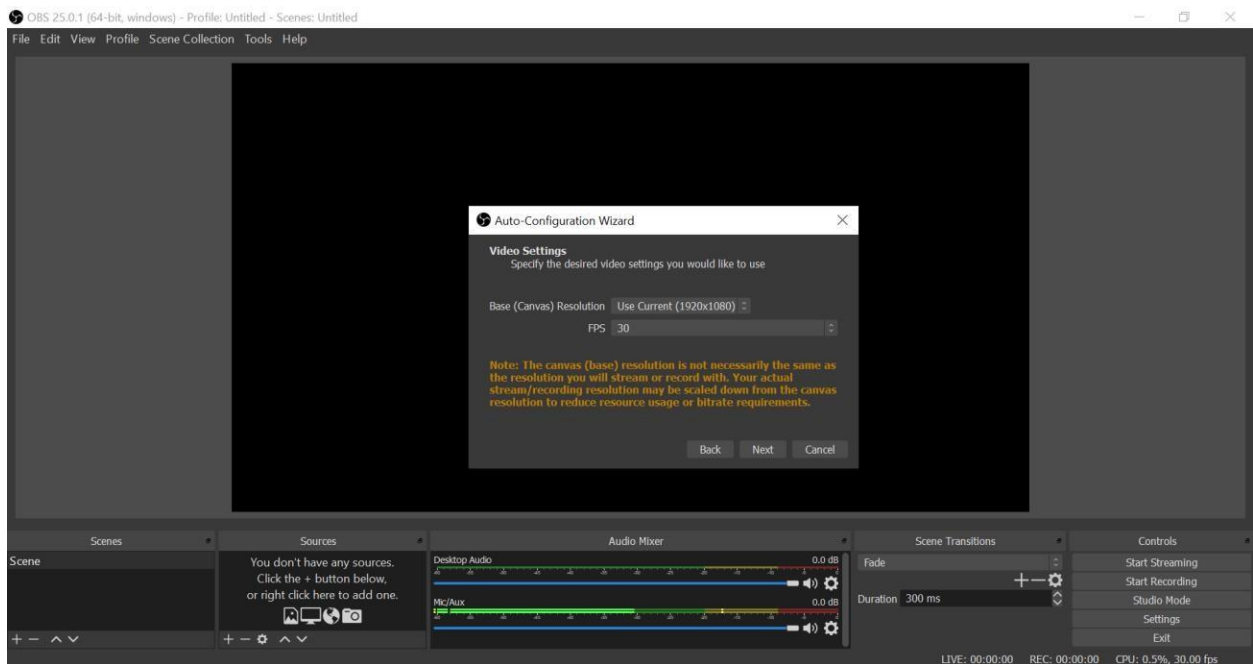
**Step 1:** Start OBS. The Auto-Configuration Wizard will appear. Press Yes to continue.



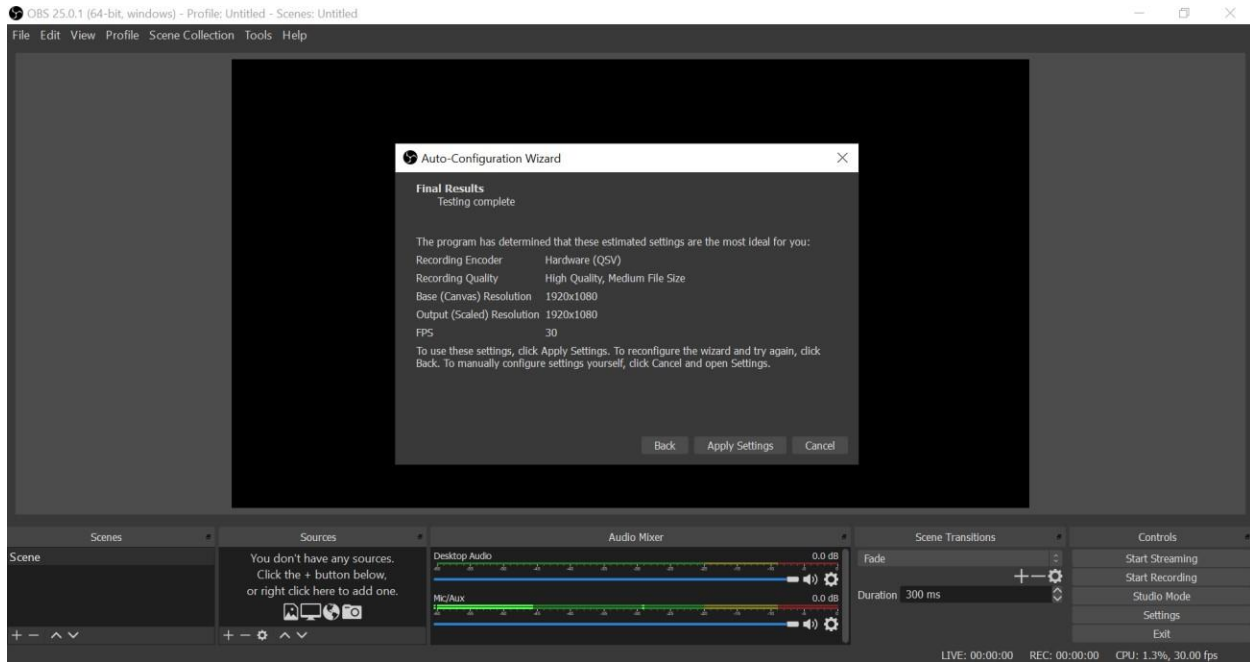
**Step 2:** Use the 'optimize for recording' option and press Next.



**Step 3:** You do not need to change the Base Resolution. Choose FPS of 30 to limit the final file size. Press Next to continue.

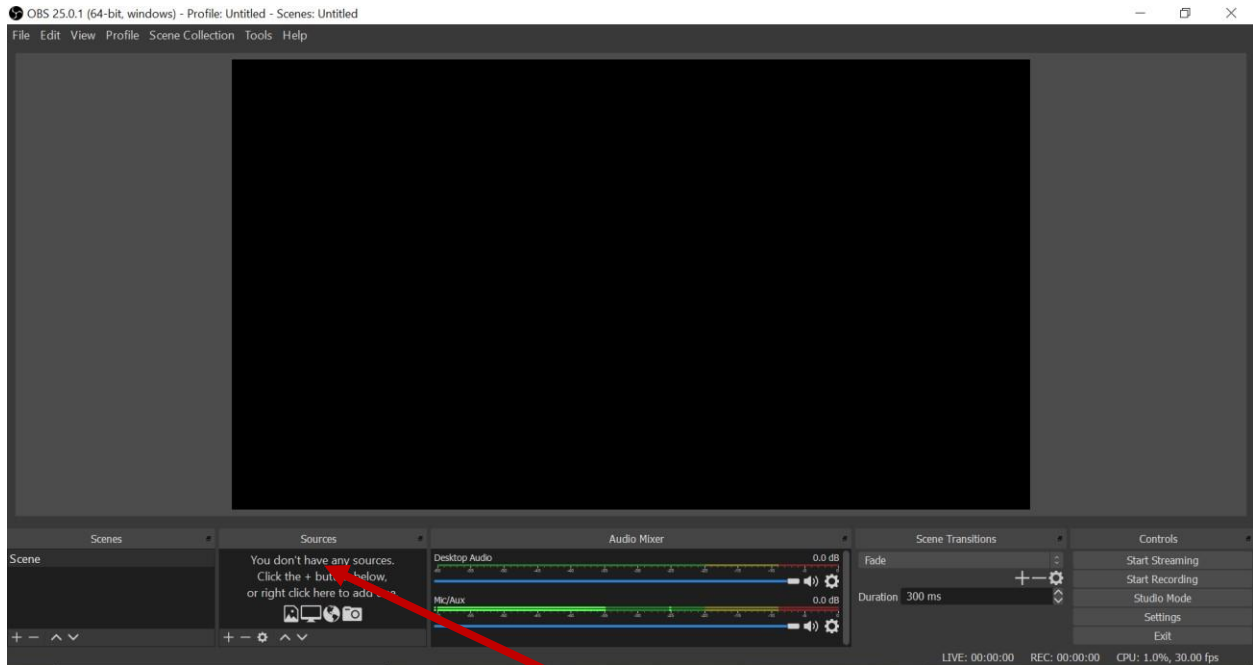


**Step 4:** The final selection of settings will appear as given below. Review and press Apply Settings.

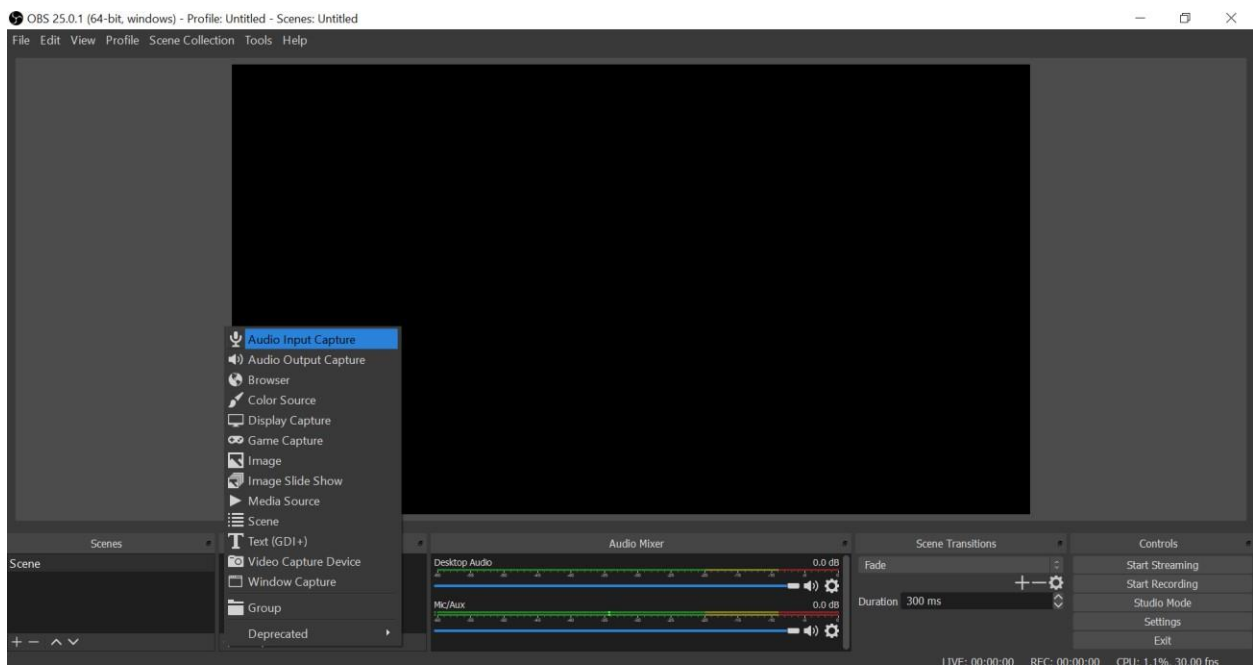


**Step 5:** The OBS interface will appear as shown below.

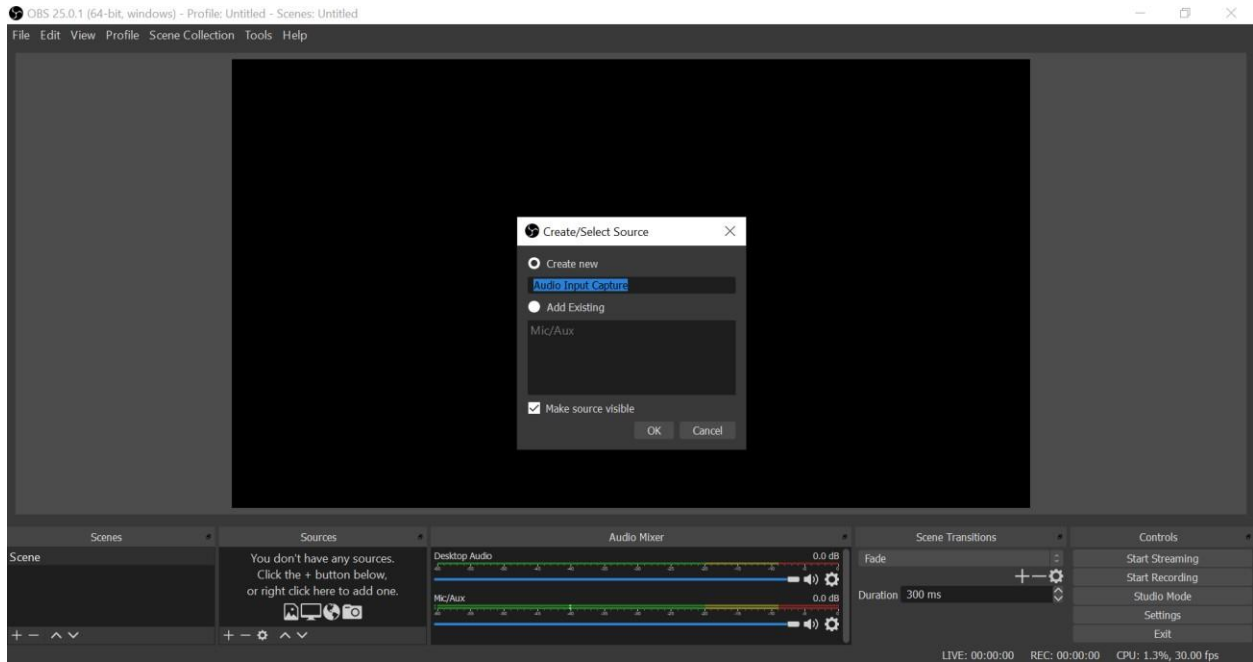




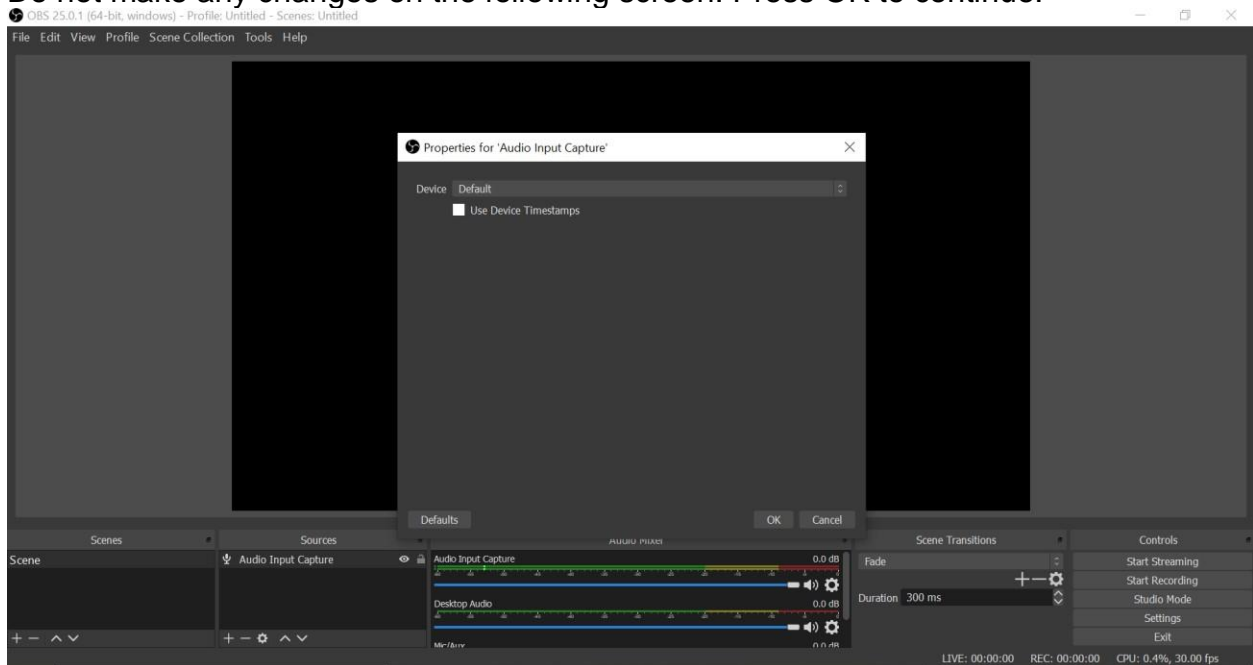
**Step 6:** The following steps are meant to include “resources” such as microphone, webcam and screen to the recording interface. Go to Sources at the bottom, press the ‘+’ sign and choose the ‘Audio Input Capture’ option as shown below.



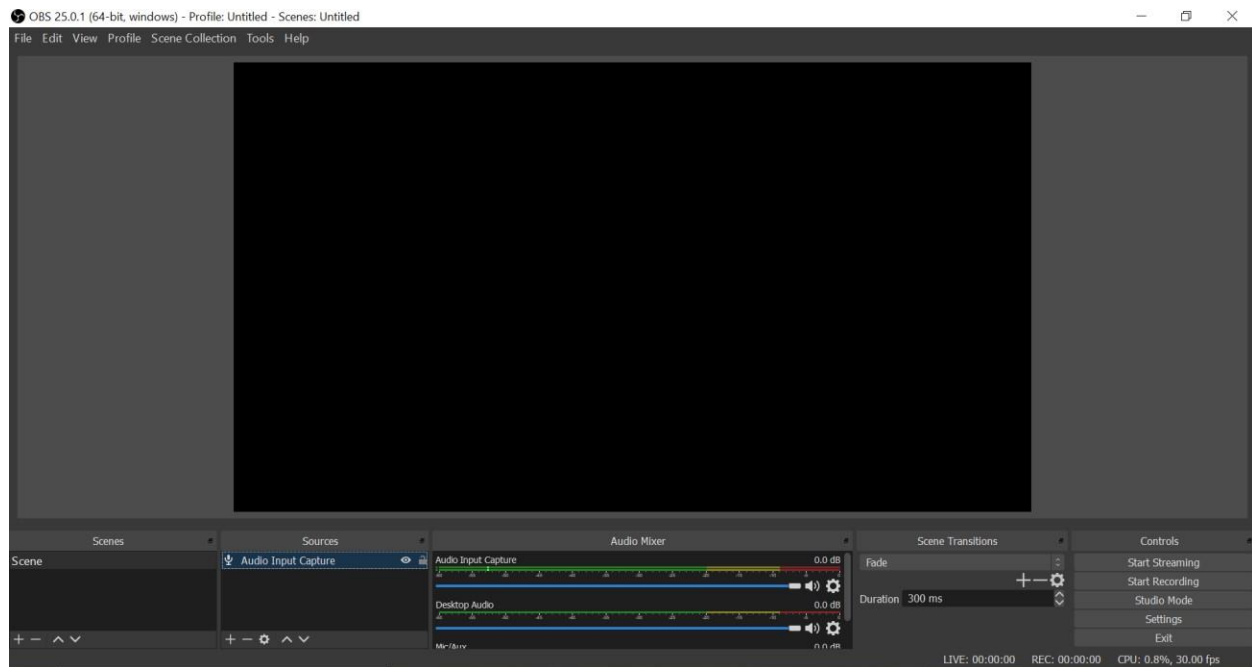
The following screen will appear. Press OK to proceed.



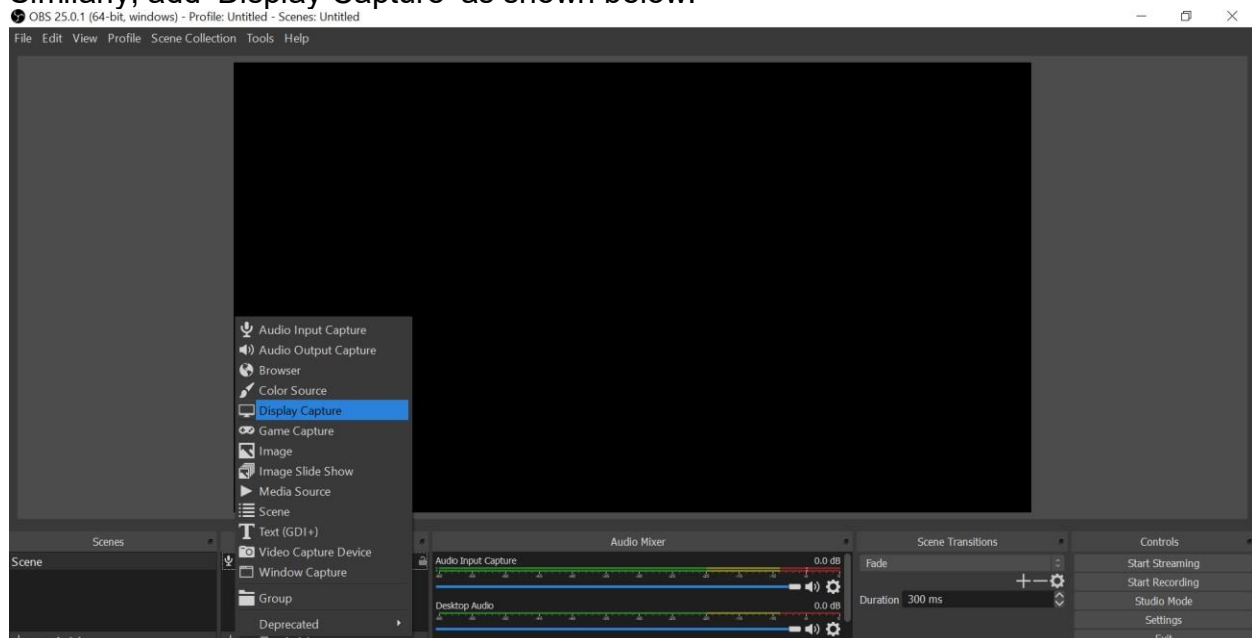
Do not make any changes on the following screen. Press OK to continue.

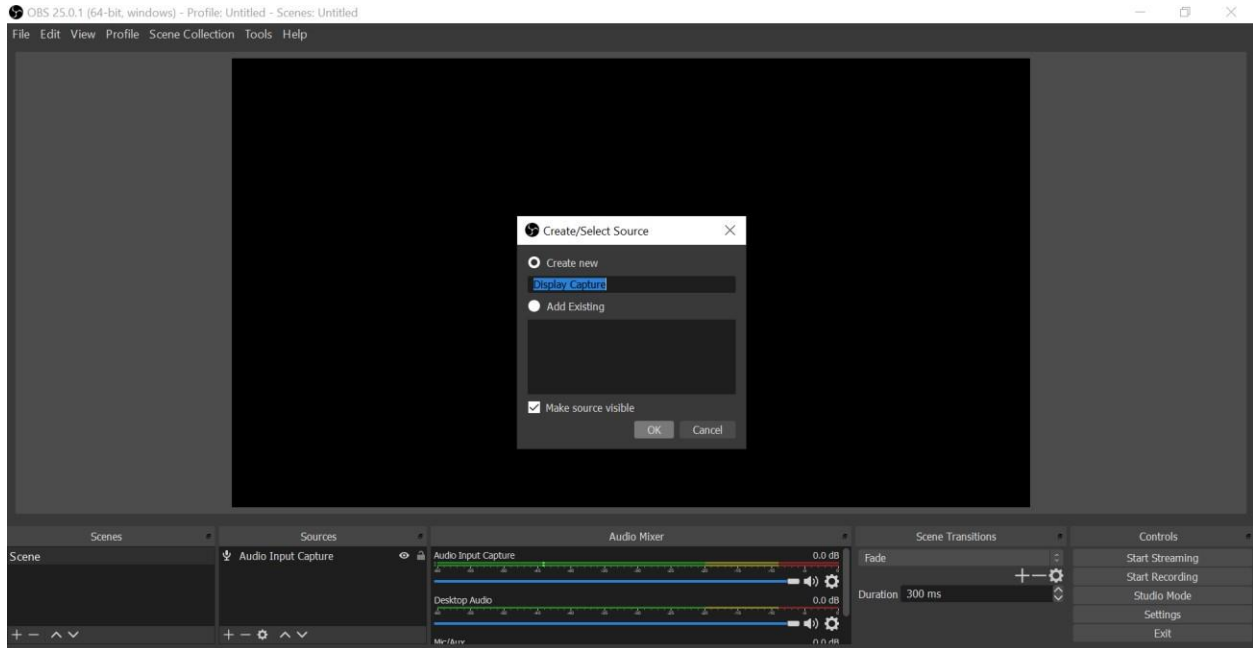


Now in the list of sources you will notice that the inbuilt microphone will be listed as a device from which input will be recorded.

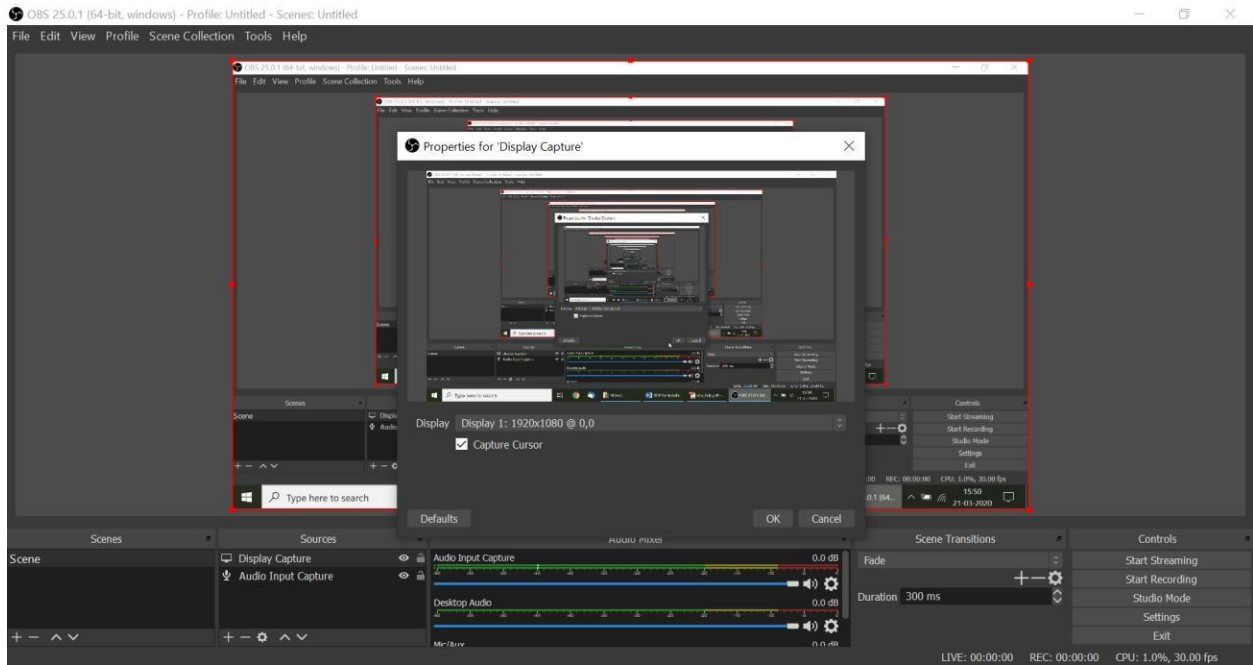


Similarly, add 'Display Capture' as shown below.

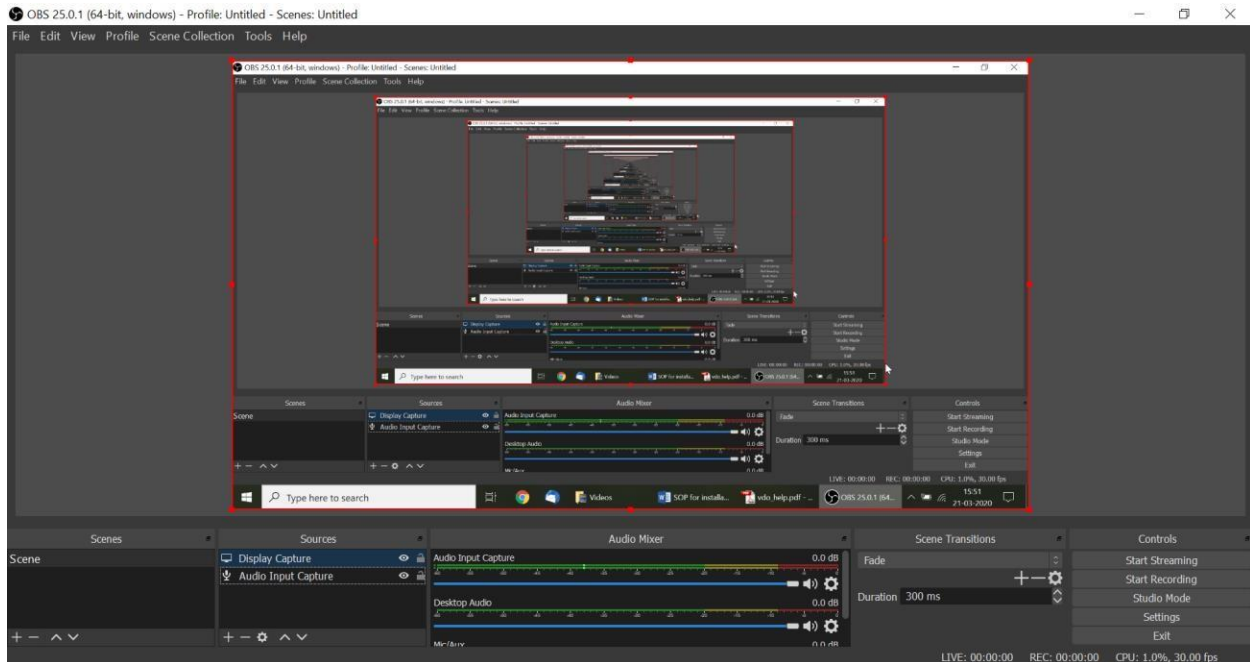




Press OK.

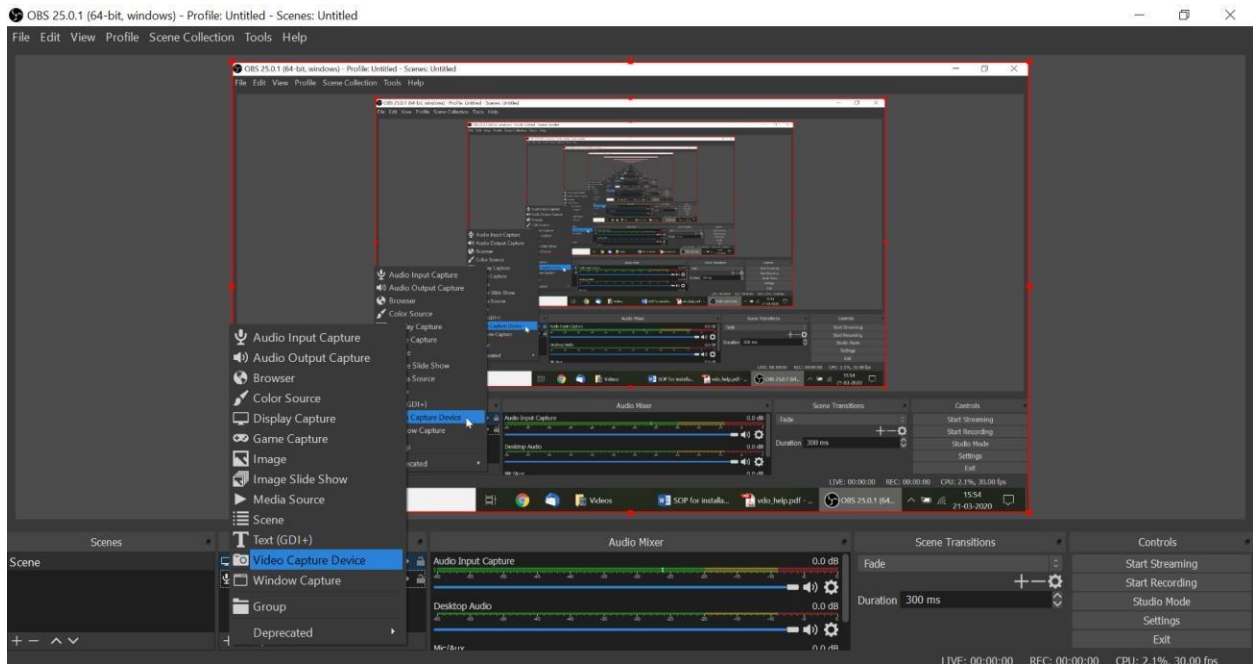


Press OK again.

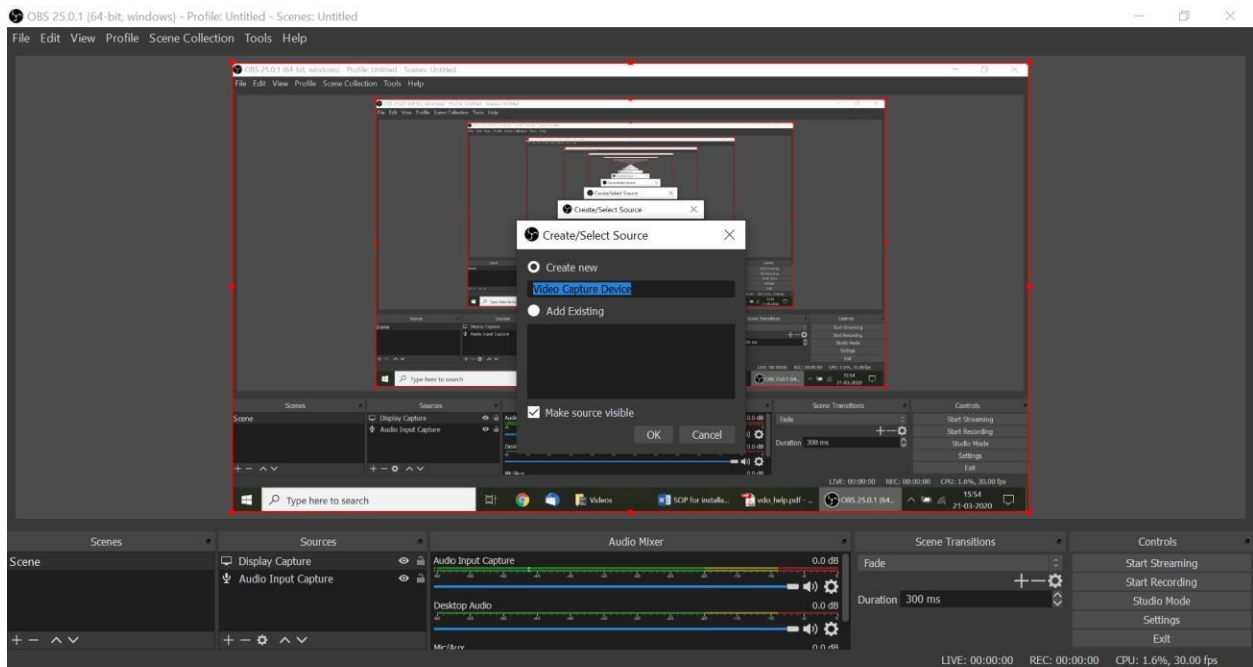


If you do not see this, please restart the application.

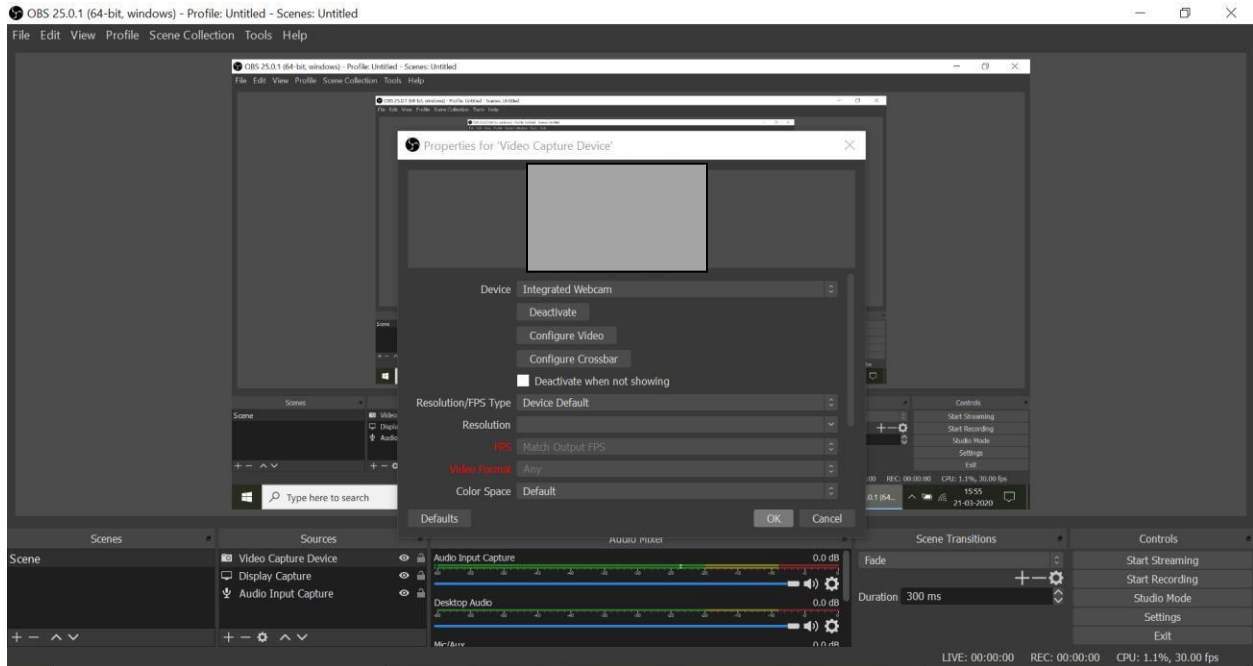
Now continue through the following steps to add 'Video Capturing Device'.



Press OK to continue.

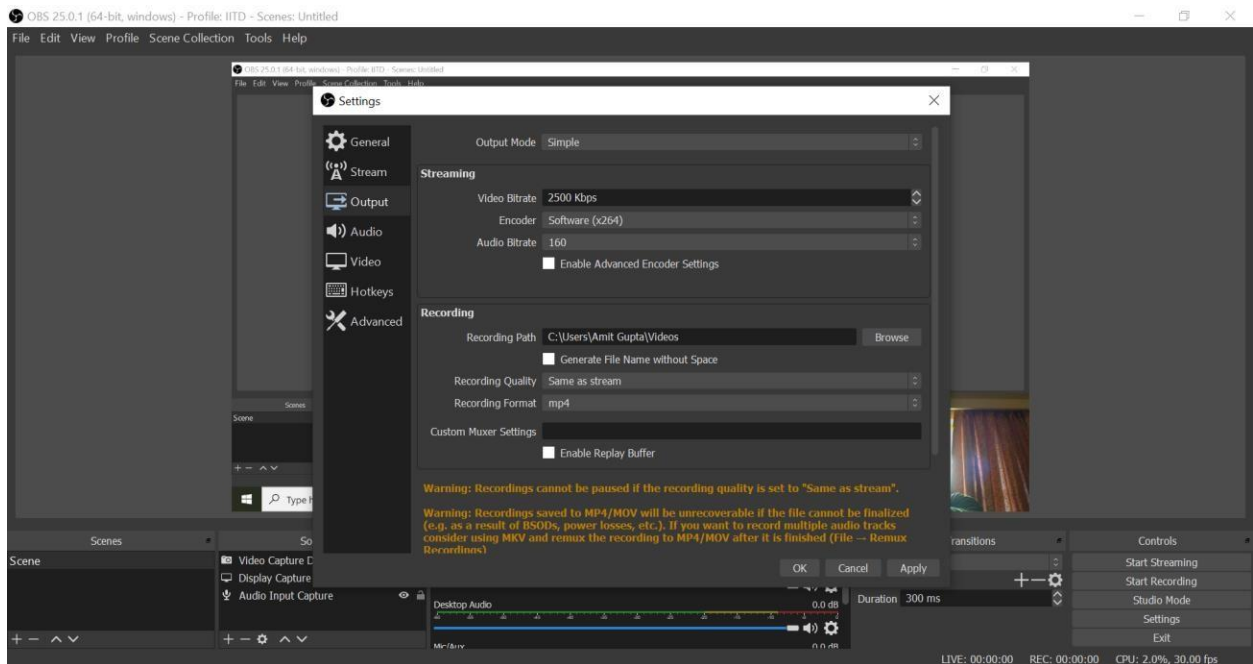


Do not change any settings and press OK to finish.



The software can now start capturing the display of your computer.

**Step 8:** Now go to File>Settings>Output>Recording Format and change default setting to mp4. Press OK.



Now you are ready to record lectures.

**Step 9:** To start recording, press 'Start Recording' that appears in the bottom right side of the window. Once finished, press 'Stop Recording'. The video can be accessed by going through File>Show Recordings.

More details on OBS can be found on the following links:

- 1) [https://www.youtube.com/watch?v=DTk99mHDX\\_I](https://www.youtube.com/watch?v=DTk99mHDX_I)
- 2) [http://www.cdeep.iitb.ac.in/vdo\\_help.pdf](http://www.cdeep.iitb.ac.in/vdo_help.pdf)
- 3) In case OBS shows black screen while capturing display, use this easy fix:  
[https://www.youtube.com/watch?v=\\_GG8DrInVx8](https://www.youtube.com/watch?v=_GG8DrInVx8)