List of Courses Offered by Spoken Tutorial Project of IIT Bombay

In association with 360 Research Foundation (India)

No.	Software	Certificate Criteria	Application
1	**Basic IT Skills package**	Certificate	Learn how to use • The **Linux** operating system • **LibreOffice Suite** - for basic Office applications and • **Firefox** web browser - to browse the internet safely This package is useful to all who wish to learn basic IT skills. Absolute must for beginners.
2	**Applications of GeoGebra**	Certificate	**Applications of GeoGebra** Interactive Geometry, Algebra and Calculus application for UG/PG students (12th standard and above) as well as Research Scholars.
3	**Apps on Physics**	Certificate	**Apps on Physics** are simulations that help us to understand basic topics in Physics. These Apps are freely downloadable and easy to use browser based apps. Using these apps topics chosen are in chronological order. The Apps are available in java script and html formats. We are using html format to create this series. It is intended for teaching and learning Physics from secondary school to higher secondary.
4	**Android app using Kotlin**	Certificate	Google has announced **Kotlin** as an official language on **Android**. **Kotlin**, is a statically typed programming language for the JVM, Android and the browser. It is expressive to make your code more readable and understandable. Useful for anyone who wants to learn how to make an **Android app**
5	**Arduino**	Certificate	**Arduino** is open source hardware, software and micro-controller based kit. It is used for building digital

			devices and interactive objects that can sense and control physical devices. Useful for High School and UG/PG Electronics students, hardware professional.
6	Ascend	Certificate	**ASCEND** is a free, open source, mathematical modelling system. Its main uses have been in the field of **chemical process modelling**, with its novel modelling language conventions and powerful solver. Useful for UG/PG Chemical Engg and Chemistry students.
7	Avogadro	Certificate	**Avogadro** is a free and open source, advanced molecule editor and visualizer designed for cross-platform use in computational chemistry, bioinformatics, etc. It offers flexible high quality rendering. Useful for UG/PG Chemistry and Bioinformatics students.
8	AutoDock4	Certificate	AutoDock is a molecular modeling simulation software. It is specifically used for protein-ligand docking. Useful for UG/PG students and research scholars in the fields of Chemistry, Biochemistry, Molecular Biology, Bioinformatics.
9	BASH	Certificate	**Bash** is a "Unix shell" command-line interface for interacting with the operating system. Bash has the ability to run an entire script of commands, known as a "Bash Shell script" or "Shell script". Familiarity with GNU/Linux command lines, and familiarity with basic programming concepts is a pre-requisite for learning **BASH**. Polytechnic/UG/PG computer hardware students and system administrators will greatly benefit by learning to automate common tasks using BASH.
10	Biopython	Certificate	Biopython is a collection of Python tools for computational biology and bioinformatics. Biopython contains modules and classes to represent protein sequences, nucleic acid sequences and sequence annotations.

			Useful for UG/PG Bioinformatics students.
11	**Blender**	Certificate	Open source equivalent to Maya and 3DMax. Useful to create 3D Animation for Architecture & Animation students. Can be used by UG/PG Civil Engineering students, also.
12	**Bootstrap**	Certificate	Bootstrap is an open-source and front-end framework. It is useful for easy and fast web development. can be used by Web designers, Web developers, Higher Secondary and UG Students.
13	**C and C++**	Certificate	Powerful features, simple syntax, and portability make **C** a preferred language among programmers, for business and industrial applications. Widely used in the development of operating systems. Useful for High School and UG/PG CSE/CS/IT students and anyone who wishes to learning basic programming.
14	**Advanced C**	Certificate	For **Advanced C** series, learner should necessarily go through **C** and **C++** series beforehand. Useful for High School and UG/PG CSE/CS/IT students and anyone who wishes to learning advanced programming.
15	**Advanced C++**	Certificate	For **Advanced C++** series, learner should necessarily go through **C** and **C++** series beforehand. Useful for UG/PG CSE/CS/IT students and anyone who wishes to learning advanced programming.
16	**CellDesigner**	Certificate	CellDesigner is a process diagram editor for drawing gene-regulatory and biochemical networks. CellDesigner is used for user-friendly visualization Modeling and Simulation of genetic regulatory networks, Protein networks and metabolic networks.

			Useful for UG/PG Bio-Chemistry students.
17	**Chemcollective Virtual Labs**	Certificate	**ChemCollective Virtual Labs** is a simulation of a chemistry laboratory. It allows students to explore and reinforce fundamental concepts, select various standard reagents (aqueous) and use them as they use in a real laboratory. Useful for Chemistry students from 9th standard onwards.
18	**CSS**	Certificate	**Cascading Style Sheet (CSS)** is a style sheet language used to style documents written in markup language like HTML and XML. It allows developers to control how the webpage should be displayed by applying styles (e.g color, font, space). Before CSS, all the styles and formatting were explicitly defined within HTML. Useful for web developers and website administrators.
19	**Circuit JS**	Certificate	CircuitJS is a web-based electronic circuit simulator that is highly interactive and user-friendly.It offers various components like batteries, resistors, inductors, and capacitors, enabling easy circuit design and analysis. Useful for high school students, electronics students, and hardware professionals.
20	**Drupal**	Certificate	Drupal is a free and open source content management system (CMS) written in PHP and distributed under the GNU General Public License. Useful for website-building and web applications. Useful for web developers, website administrators, and UG/PG CSE/IT/CS students who wish to learn website management.
21	**DWSIM**	Certificate	DWSIM is an open-source CAPE-OPEN compliant chemical process simulator. It allows us to conduct experiments and analyze data using advanced models and operations. Useful for UG/PG Chemical Engineering students to run the simulations and get a better understanding

			on a phenomenon.
22	eSim	Certificate	eSim (previously known as Oscad / FreeEDA) is an open source EDA tool for circuit design, simulation, analysis and PCB design. It is an integrated tool built using open source software such as KiCad (http://www.kicad-pcb.org) and Ngspice (http://ngspice.sourceforge.net/). Useful for UG/PG Electrical Engg/Electronics students.
23	Expeyes	Certificate	ExpEYES stands for Experiments for Young Engineers and Scientists. It is used to perform basic Physics and Electronics experiments. ExpEYES junior can be used from secondary to graduate level and also in some engineering branches.
24	Firefox	Certificate	Free, open source and popular web browser. Allows you to view Internet web pages, navigate through web pages, and search for web pages using search engines such as Google, Yahoo Search or Bing. Anyone who wishes to learn web browsing.
25	FrontAccounting-2.4.7	Certificate	Free, open source business accounting software (having features similar to Tally). Useful for UG/PG Commerce students.
26	GChemPaint	Certificate	**GChemPaint** allows you to draw and display 2D chemical structures. Very useful to teach and learn abstract chemistry concepts. This application is useful for school students (9th standard and above) as well as school teachers. Works only on Linux
27	GeoGebra 5.04	Certificate	Interactive Geometry, Algebra and Calculus application. Very useful to teach and learn abstract geometry concepts.

			Useful for school students (7th standard and above) as well as school teachers.
28	**gedit Text Editor**	Certificate	gedit Text Editor is a powerful general purpose text editor. It is free and open source software. It is simple and ease of use with simple GUI. Useful for everyone who wish to learn to use a text editor in Linux. Works only on Linux
29	**GIMP**	Certificate	Graphics art and design software application for the editing and creation of original images, icons, graphical elements of web pages and art for user interface elements. Useful for all graphic related work. Open source equivalent of **Photoshop**. Useful for High School and UG/PG students who wish to learn photoediting and create graphics.
30	**GIT**	Certificate	Git is a distributed version control software. It is a free and open source software. It keeps track of changes made to a file or set of files. It helps in tracking the project progress history. Useful for UG/PG CSE/IT/CS students, working professionals
31	**Gnuplot**	Certificate	Gnuplot is a command-line driven cross platform graphing software. The source code is copyrighted but freely available. gnuplot can plot 2D and 3D graphs, draw surface, generate heat map, plot and fit mathematical functions. gnuplot supports many non-interactive uses such as web scripting. Plotting back-end of several softwares such as octave is gnuplot. Useful for UG/PG and researchers.
32	**GUI in Scilab**	Certificate	Graphical user interface (GUI) in Scilab allows you to operate the software programmes with a point-and-click interface, eliminating the need for others to learn a language or type commands in order to run the programme. Useful for all science and engineering students

33	**HTML**	Certificate	HTML elements form the building blocks of all websites. HTML allows embedding of images and objects and is extensively used to create interactive forms and webpages. Useful for High School and UG/PG students, working professionals - Multi-disciplinary
34	**Inkscape**	Certificate	Graphics art and design software application for the editing and creation of original images, icons, graphical elements of web pages and art for user interface elements. Useful for all graphic related work. Open source equivalent of **CorelDraw** and **Illustrator**. Useful for High School and UG/PG students who wish to learn desktop publishing work - creating banners, posters, brochures, CD cover image, artwork for textiles, etc.
35	**Introduction to Computers**	Certificate	Absolute basic tutorials on parts of a computer, connecting the parts using cables, printer configuration, creating a gmail account, sending and receiving mails and using the Google Drive. Useful for first-time computer users of any age group.
36	**Java and Netbeans**	(Java) Certificate (Netbeans) Test In Progress	Learn to use **Java** • Free and open source, high level, simple as well as object-oriented programming language. Included in the curriculum of schools and colleges offering Computer Science and IT subjects. Learn to use **Netbeans IDE** • **NetBeans IDE** is an open-source integrated development environment. NetBeans IDE supports development of all Java application types (Java SE including JavaFX, (Java ME, web, EJB and mobile applications) • With **Netbeans IDE**, one can quickly and easily develop desktop, mobile and web applications with **Java, HTML5, PHP, C/C++** and more.

			Useful for UG/PG CSE/IT/CS students We recommend that **Java** series be followed with **Netbeans** series.
37	**Java Business Application**	Certificate	Learn how to create a business application from scratch. For **Java Business Application** series, learner should necessarily go through **Java** and **Netbeans** series beforehand. Useful for UG/PG CSE/IT/CS students and working professionals.
38	**Java Script**	Certificate	JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it for client-side page behavior, and all major web browsers have a dedicated JavaScript engine to execute it. Useful for Web designers, Web developers, Higher Secondary and UG Students.
39	**Joomla**	Certificate	Learn how to a Content Management System for building websites, webpages, etc. Useful for web developers, website administrators, and UG/PG CSE/IT/CS students who wish to learn website management.
40	**Jmol Application**	Certificate	Learn how to create 3D chemical, crystal and biomolecules structures. Very useful to teach and learn abstract chemistry concepts. This application is useful for school students (9th standard upto Post Graduation level) as well as school teachers.
41	**Koha Library Management System**	Certificate	Learn how to create a library, a librarian, add books, journals, and other library items, Marc framework, order a book, cataloging, circulation, add subscription, serial subscription, receive serials, OPAC search, access library on web, cataloging using Z39.50, manage budgets and funds, convert Excel data to MARC, import MARC in Koha. Koha is useful for Library Science students and Library Staff who wish to create a Koha library for their

			institute.
42	**KTurtle**	Certificate	An educational programming environment which helps in learning how to build logic and how to program, in an easy manner. Some of its features are: intuitive syntax highlighting, simple error messages, integrated canvas to make drawings on, integrated help function, slow-motion or step execution, and more. Recommended for all who would like to learn programming logic. Useful for school students (7th standard and above)
43	**LaTeX & XFig**	(LaTeX) Certificate Certificate	**LaTeX** is a typesetting software for preparing reports, letters and presentations - specially useful for persons engaged in writing/ publishing documents from science/ arts/ commerce fields. **Xfig** is a free and open source vector graphics editor. In **Xfig**, figures may be drawn using objects such as circles, boxes, lines, spline curves, text, etc. ... and used in **LaTeX** and other documents. Useful for UG/PG students, faculty and research scholars.
44	**LibreOffice Suite**	Certificate	Trains in basic computer usage skills like Word processing, Spreadsheet, Presentation using the LibreOffice components **Writer**, **Calc** and **Impress**. One can also learn other useful components like **Draw**, **Math** and **Base** in this series. Useful for school students (7th standard and above), anyone who wishes to learn to use an OFFICE suite.
45	**Linux & Ubuntu** **BOSS Linux**	Certificate	Free operating system, almost neutral to virus attacks and no hassles for licensing issues. Polytechnic/UG/PG computer hardware students and system administrators will greatly benefit by learning to use the Linux OS.
46	**Linux AWK**	Certificate	Linux AWK is a language for processing text files. AWK is typically used as a data extraction and reporting tool. It is a standard feature of most Unix-like operating systems. Polytechnic/UG/PG computer hardware students and system administrators can learn how to use the

			wide variety of AWK commands of Linux, to handle files, directories, processes etc.
47	**Marble**	Certificate	Marble is a virtual globe and world atlas. It allows users to choose among the Earth, Moon, and other planets to display a 3-D model. Useful for Secondary and higher secondary students, and teachers.
48	**Moodle Learning Management System**	Certificate	Moodle LMS is one of the most popular LMS used globally by educational institutes. This Moodle series is divided into 2 parts - • one for Moodle site administrators and • another for teachers. Moodle site Administrators • will install Moodle on the server • create course categories as per institute guidelines and • manage courses and user accounts for multiple courses Teachers will learn to- • upload and edit content for their course. • create assignments and quizzes to assess the students' progress and • enroll students to their course and communicate with them. Useful for system administrators, site administrators, trainers and faculty. Not useful for students **Click here Instruction Sheet for Moodle LMS**

49	ns-3 Network simulator	Certificate	The ns-3 simulator is a discrete-event network simulator, used in the field of Computer networking. Useful for researchers and for college students.
50	OpenFOAM	Certificate	Open source/ free CFD (Computational Fluid Dynamics) software available for solving and analyzing problems and to create a real world fluid flow movie. Open source equivalent to FLUENT. Widely used in Academics and is gaining popularity in Industry as well- Companies including AUDI, Tata Steel, Volkswagen, and Govt. agencies like BARC (Babha Atomic Research Center). Useful for Mechanical, Civil, Chemical Engineering students in 3rd and 4th year. Works only on Linux
51	OpenModelica	Certificate	OpenModelica is an open source modelling and simulation environment intended for industrial and academic usage.It is an object oriented declarative multi domain modelling language for complex systems. Useful for Chemical Engg students to learn how to do energy balance
52	OpenPLC with LDmicro	Certificate	OpenPLC is based on ATMega16 AVR microcontroller. The board is equipped with sets of digital and analog input/output pins, a standard ISP header to which you can connect an external programmer for loading programs from computers, output power pins, external UART module, reset button etc and input power terminal. useful for UG/PG Electronics students, hardware professional or anyone who is interested in PLC programming.
53	Osdag	Certificate	Osdag is a cross-platform free/libre and open-source software for the design (and detailing) of steel structures, following the Indian Standard IS 800:2007. It allows the user to design steel connections, members and systems using a graphical user interface. useful for UG/PG civil Engineering students and working professionals.

54	**Perl**	Certificate	Practical Extraction and Reporting Language commonly known as PERL is a high level, general purpose and dynamic programming language. PERL has been used in graphics, web and network programming etc and you can find it's footprints in finance and bioinformatics domain, too. Useful for UG/PG CSE/IT/CS students to learn programming of business applications.
55	**PHP & MySQL**	Certificate	Package for developing interactive websites and establishing back-end connectivity with a database - Famous websites using PHP include Facebook, Google, and Wikipedia. Useful for UG/PG CSE/IT/CS students
56	**Python 3.4.3**	Certificate	Numerical computational software for Science and Engineering Education - used in 3D animation and Gaming industry, Artificial Intelligence, YouTube, NASA, CERN, Yahoo and so on. Useful for UG/PG CSE/IT/CS students and CBSE high school students
57	**PhET Simulations for Biology**	Certificate	PhET interactive simulations provide an extensive suite of simulations for Biology. These simulations help students to comprehend concepts through the use of graphics and interactive animations. Teachers can use PhET simulations to create worksheets for re-enforcement of the concepts. Useful for teachers and high school students.
58	**PhET Simulations for Chemistry**	Certificate	PhET interactive simulations provide an extensive suite of simulations for Chemistry. These simulations help students to comprehend concepts through the use of graphics and interactive animations. Teachers can use PhET simulations to create worksheets for re-enforcement of the concepts. Useful for teachers and high school students.
59	**PhET Simulations for**	Certificate	PhET interactive simulations provide an extensive suite of simulations for Physics.

	Physics		These simulations help students to comprehend concepts through the use of graphics and interactive animations. Teachers can use PhET simulations to create worksheets for re-enforcement of the concepts. Useful for teachers and high school students
60	**PhET Simulations for Mathematics**	Certificate	PhET interactive simulations provide an extensive suite of simulations for Mathematics. These simulations help students to comprehend concepts through the use of graphics and interactive animations. Teachers can use PhET simulations to create worksheets for re-enforcement of the concepts. Useful for teachers and high school students.
61	**QCAD**	Certificate	**QCAD** is a free, open source application for computer aided drafting (CAD) in two dimensions (2D). Learn to create technical drawings such as plans for buildings, interiors, mechanical parts or schematics and diagrams using **QCAD**. Useful for UG/PG architecture students
62	**QGIS**	Certificate	QGIS (previously known as Quantum GIS) is a free and open-source cross-platform, desktop geographic information system (GIS) application that supports viewing, editing, and analysis of geospatial data. QGIS functions as geographic information system (GIS) software, allowing users to analyse and edit spatial information, in addition to composing and exporting graphical maps. Useful for Geography/Earth Science students to learn GIS, Mapping, and Spatial Analysis and Geographic Information.
63	**R**	Certificate	R is the most preferred open-source language for analytics and data science. R offers a large variety of statistical (linear and nonlinear modelling, classical statistical tests, time-series analysis, classification, clustering, …) and graphical techniques, and is highly extensible.

			Useful for UG/PG CSE/IT/CS students to learn statistics, big data, data science
64	**RDBMS**	Certificate	RDBMS stands for Relational Database Management System. RDBMS is the basis for SQL, and for all modern database systems like MS SQL Server, IBM DB2, Oracle, MySQL, PostgreSQL and Microsoft Access. PostgreSQL is a powerful, open source relational database system. It runs on all major operating systems, including Linux, Windows and Mac OS. It supports most SQL data types, foreign keys, joins, views, triggers and stored procedures. It has programming interfaces for C/C++, Java, Perl, Python, Ruby etc. Useful for UG/PG CSE/IT/CS students to learn industry database management
65	**Ruby**	Certificate	Dynamic, open source, general-purpose, interpreted, true object-oriented programming language. It is a server-side scripting language similar to Python and PERL. Large programs written in Ruby are easily maintainable. It can be easily connected to DB2, MySQL, Oracle, and Sybase. Useful for UG/PG CSE/IT/CS students to learn industry level programming
66	**Scilab**	Certificate	Mathematical and scientific calculation software, open source substitute for MATLAB, very useful for all science and engineering students, in academics particularly.
67	**Single Board Heater System**	Certificate	A single-board heater system is a low cost, open source, lab-in-a-box setup. It consists of a heater assembly, fan, temperature sensor, ATmega16 micro-controller and associated circuitry. The application of this device is in the Control Systems area of Engineering. All Undergraduate level experiments and most Post graduate level control experiments can be performed on the SBHS device.
68	**Synfig 2D animation**	Certificate	2D animation software designed as a powerful industrial-strength solution for creating film-quality animation using a vector and bitmap artwork. Useful for High School and UG/PG students who wish to learn animation.
69	**UCSF Chimera**	Certificate	UCSF Chimera is a program for interactive visualization and analysis of molecular structures and related data. Using Chimera, one can generate high-quality images and animations.

			Useful for UG/PG Chemistry students.
	Typing Software		
70	**KTouch**	Certificate	Typing tutor - teaches how to type using an online interactive keyboard. Learn typing at your own pace. Gradually increase your typing speed and along with it, your accuracy.
71	**TuxTyping**	Certificate	Typing application especially for children Start typing, Practice lessons, Play a typing game, Set a language for typing
	Utility software/application		
72	**K3B**	Not for Training	Learn to burn audio/video/data CDs/DVDs using **K3B**
73	**Filezilla**	Not for Training	Learn to configure and use **Filezilla**, a free file transfer protocol application that's easy to set-up and customize.
74	**Thunderbird**	Not for Training	Learn to configure and use **Thunderbird**, a free email application that's easy to set-up and customize.

About Training/Workshops using the Spoken Tutorial E-Tutor

The Spoken Tutorial Project is about teaching and learning a particular FOSS (Free and Open Source Software) like Linux, Scilab, LaTeX, PHP & MySQL, Java, C/C++, LibreOffice etc. via an easy Video tool - Spoken Tutorials Google award winning MOOC. The salient features of training are many. See Below:

1. Students, Staff & Teachers from Schools, Colleges, Universities, Polytechnics, ITIs, Skill centers, NGOs – all can avail the training at very low cost.

2. The method is Active learning on Computer systems and very suited for Remote/Distance Education.

3. Teachers & students can master the software courses on their own, in their own campus and at their own time.

4. Once one gets started any student or faculty can master the Software Course and also get Certificates.

5. UG, PG or Research scholar students and even teachers of Science, IT, Engineering, Commerce, Management, MCA disciplines can learn any of the FOSS.

6. Typically, the first Training at any college is of 2 hours duration. Timing is per the group's convenience.

7. As a first step, the organiser typically a Faculty member/Teacher must register on the Spoken Tutorial site and become authorised to request and conduct training in his/her college.

8. Any college which is organising the Training needs to get a computer lab ready with machines that support sound. There is no lower or upper limit on the number of participants. This just depends on the number of computers available. For additional participants, laptops if available can be used.

9. Support from IIT Bombay is available 24x7 through phone, message & e-mail.

10. It is recommended that learners take the Online Assessment Test within 4 to 6 weeks after the 1st training session.

11. The cost is Rs.2000 /per course for Faculty/Teachers and Rs.1000/per course for students (except school students).

12. Bulk group discounts and Institute level Subscription payment models can also be considered after the institute starts the training with a group of learners.