



# HSNC UNIVERSITY, MUMBAI KISHINCHAND CHELLARAM COLLEGE



## Department of Life Sciences

Under the aegis of DBT Star Status and Star Scheme

Organizes

## Student Development Program

In collaboration with Spoken Tutorials IIT Bombay

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The department of Life Sciences, K. C. College, organized a Student Development Program in collaboration with Spoken Tutorials IIT Bombay. This was initiated on the 10th of July, 2021, with an orientation session that introduced students to the program and its several benefits. Following this the undergraduate Life Sciences students in the second and third year registered and activated their individual accounts on the Spoken Tutorial webpage. This Student Development Program was initiated to help students become well-versed in software applications relevant to the field of Life Sciences. This program was partly funded by the DBT Star Status Grant.

The following software were included in the program:

1. **Jmol:** It provides molecular visualization and analysis of chemical structure. It can be used for 3-dimensional molecular chemical structure modelling.
2. **Biopython:** Contains a set of freely available tools useful for Computational Biology and Bioinformatics.
3. **GChemPaint:** A molecular editor and viewer used to draw 2-dimensional chemical structures.
4. **R:** A programming language used for statistical analysis and graphics representation.
5. **CellDesigner:** A structured diagram editor for modelling biochemical networks, gene regulatory drawings, metabolic networks, etc.
6. **QGIS:** A geographic information system that supports viewing, editing, and analysis of geospatial data.

Instruction sheets and videos were provided to registered students to assist them in accessing the tutorials. The links to download the relevant software were also shared. All tutorial videos could be viewed online through the Spoken Tutorial website or downloaded and viewed offline. The course material was available throughout enabling students to revisit, relearn and revise the contents of each tutorial. As the course was self-paced, students could view and study the lessons at time suitable to them.

The tutorials used a side-by-side training method, allowing students to learn one command at a time and practice alongside the video tutorial. The course for each software was covered in a span of short videos which facilitated efficient processing of information. At the end of each video, there were assignments to help put what was taught into practice.

The program was extremely resourceful and provided all the information needed to build a strong basic foundation of the six software applications taught. However, not all students were well acquainted with computer technology or had access to laptops, desktops and tablets, therefore, they faced a few technical problems. To resolve such difficulties, further assistance and guidance was provided to all students by Ms. Vidya Kadam, the training manager at IIT Bombay. Additionally, alternative options were provided to those students who couldn't download software applications due to differences in operating systems. Moreover, a discussion forum was also available for students to address their queries and concerns.

In all, the Student Development Program allowed students to master the software programs on their own and at their own pace making them well-equipped with the same. It was effective in supporting active learning of various software applications and programs particularly in light of the pandemic and social distancing norms where offline training was not feasible. Therefore, this served as a wonderful opportunity to enhance knowledge by integrating biology with modern technology.

~ Team KC LSC