St. Xavier's College – Autonomous

Mumbai

SYBSc

Syllabus for Scientific Communication Skills (Statistics)

4th Semester

(June 2011 onwards)

Contents:

Syllabus for Courses: SSTA04SCS

S.Y.B.Sc. Statistics (Scientific Communication Skills) **Course: SSTA04SCS**

Learning objectives:

The course enables students to understand:

1. The development and communication of science as a team activity.
2. Scientific communication as a vehicle of dissemination of rational thinking

Number of lectures: 12 Lectures

Sr. No.	Sessions	Plan	Tutor
1.	**Recap of semester 3 & Types and Structure of Scientific Writings**	a) Explain the various types of scientific writings: Papers, Reviews, Short communications, Articles for newspapers, Popular science writing, Chapters in textbook, etc. b) Discuss in detail the structure of science paper using different journals in your subject c) Exercise: Students to be given papers to work on in group and asked to list all points discussed in (b)	Faculty member of the Dept/ an invited expert.
2	**Writing: The 'How to of writing'**	a) Teacher input on the rules for: Text, figures, graphs, tables, etc. Example - Punctuation, Location Legends, Details etc b) How to write a title? How to write an introduction? Example - Give photocopies of a paper (excluding the title and introduction) Ask students to: • Formulate the title of the paper • Prepare an introduction i.e. list the points they would like to cover in the introduction. c) How to write a bibliography? Teacher input regarding different styles of reference writing and the variation for books, journals etc.	Faculty member of the Dept/ an invited expert. The Matter used for the exercise could be decided by the Dept/ expert

		Example - Students to write names of 5 text books/ reference books they normally use as if they were writing for the bibliography of their paper. Get 4 – 5 science magazines, let students pick an article in each and write it as a reference d) How to gather information? • Literature survey from magazines, journals (letters/short communication/ abstracts/ articles/reviews) • What are good journals/authentic sites? • Search engines Example – As Homework - Give a topic (maybe their assignment topic), Student collects information...Number of references in each of the following categories: Books, Papers, Reviews…	
3.	**Writing**	a) 10 – 15 minutes staff input on how to write a paper/article. b) Groups of 3 – 4 students given papers maybe in study pack/asked to get papers in previous session and asked to read them. c) Create a new paper using the reference papers provided/ collected for their project etc: • Start with creating a title. • Write an introduction of 2 pages • Group presentation d) Writing the result. Teacher provides data/student project data. e) Students complete paper and submit to the teacher	
4.	**Writing a simple research paper/article**	a) Teacher discusses all positives and negatives of all submitted papers.	SXC Department faculty/Invitee.

		b) Student revise papers keeping in mind the suggestions of the teacher. c) Teacher explains how to make PPT of the paper, (how many slides/what to write on ppt/what to say verbally, time per slide etc)	Students given 2 weeks to get their revised papers and the corresponding ppt ready.
5.	**PPT Presentation**	Practice presentation by 4 – 5 students, randomly selected; evaluation and discussion of positives and negatives	SXC Department Faculty/Invitee (Could be a short session of 45 minutes)
6.	**Evaluation & Feedback**	Evaluation: • A fifteen minute presentation by each group. • Ten minutes for Q & A. Feedback: A questionnaire will have to be prepared and circulated before the start of the evaluation/after they complete the evaluation.	SXC Department Faculty Presentations will have to be spread over 2 weeks. A questionnaire to be created by coordinators of the course.

Course Outcomes

1. Students are familiarised with scientific method and have gained competence in using online scientific resources. (Relevant papers from research databases like Science Direct and JSTOR)
2. Students have gained competence in using offline scientific resources like Journal of Indian Statistical Association (JISA), Journal of Statistical Theory & Applications (JSTA) etc.
3. Students have developed insights on various analytical techniques that the scientific method relies on, most critically, deductive reasoning and inductive logic.
4. Students have enhanced their skills for developing concept notes and writing research papers using appropriate methods of referencing.

References:

Selected Reads from the following:

1. Thomas Kuhn on Scientific Revolutions,
2. Rationalism vs Empiricism, Realism, Idealism and other topics using the Stanford Encyclopaedia of Philosophy.
3. Positivism and Pauperian logic vs Logical Positivism vs Hermeneutics.
4. Rosenberg on Explanation, Causation and Laws.
5. Review of select scientific papers and manual of style for citations.