

Course Code: STEC 509 Course Title : Research Methodology (Elective)	Credit Hour: 03	Semester: January-June	
Rationale: This course is designed to develop students' knowledge and skills on Research Methodology in the relevant field.			
Course Outcomes: <ul style="list-style-type: none"> • Explain the activity or NARS, National and International organizations involved in agricultural research • Prepare and execute research plan • Apply and explain experimental design and describe their merits and demerits • Data analysis using statistical packages • Write and present scientific paper and thesis 			
Intended Learning Outcomes (ILOs)	Course Content	Teaching-Learning Strategies	Assessment Strategies
<p>The students will be able to</p> <ul style="list-style-type: none"> • Describe national agricultural research system of Bangladesh • Enumerate the activity of national agricultural research organization • Explain the activity of international organizations involved in agricultural research 	Agricultural Research System in Bangladesh: NARS, National and International organizations involved in agricultural research.	Lecture Discussion Visual presentation Organization visit Group work Assignment	Quiz/MCQ Short answer Essay type answer Report Presentation performance
<ul style="list-style-type: none"> • Describe the purpose of agricultural research • Make and execute appropriate research plan • Identify and prioritize research problems and solve the research problems 	Research Planning Methodology: Purpose of conduction research, Research planning, Identification of researchable problems, Prioritization of research problems and their possible solution through research, data collection for different crops.	Lecture Discussion Visual presentation Group work Assignment	Quiz/MCQ Short answer Essay type answer Report Presentation performance
<ul style="list-style-type: none"> • Describe different types of experimental design • Select appropriate design for field and laboratory experiment • Explain the merits and demerits of different types of experimental design 	Experimental design: Types of experiments. Experimental designs appropriate for field and Laboratory, their merits and demerits.	Lecture Discussion Visual presentation Group work Assignment	Quiz/MCQ Short answer Essay type answer Presentation performance Report

<ul style="list-style-type: none"> Analyse variance by using different Statistical packages Compare of treatment means by using different methods Conduct Regression and correlation analysis 	Statistical packages for data analysis Statistical Analysis of Experiments data: Analysis of variance, Comparison of treatment means. Regression and correlation analysis.	Lecture Discussion Visual presentation Group work Assignment Practice data analysis	Quiz/MCQ Short answer Essay type answer Presentation performance Report Analysis performance
<ul style="list-style-type: none"> Explain and interpret the data Prepare a scientific paper as assignment 	Thesis/Scientific paper writing: Structure and procedure of data interpretation. Write up a scientific paper as assignment.	Lecture Discussion Visual presentation Group work Assignment	Quiz/MCQ Short answer Essay type answer Presentation performance Report
<ul style="list-style-type: none"> Prepare slides from research findings Present the slides properly in seminar 	Presentation of Research Findings: Slide preparation. Points to be considered for effective presentation.	Lecture Discussion Visual presentation Group work	Quiz/MCQ Short answer Essay type answer Presentation performance

Reference Books

1. Anonymous. 1990. Research Planning and Evaluation Training Course Resource Manual, BARC, Dhaka & BARI, Joydebpur.
2. K.A. Gomez and A.A. Gomez. 1984. Statistical Procedures for Agricultural Research. Second Edition, International Rice Research Institute, John Wiley & Sons, New York, pp. 01-340.
3. R.I. Mondal, M.S. Islam, M.A.J. Bhuiya, M.M. Rahman, M.S. Alam and M.H.H. Rahman. 2011. Krishi Projukti Hatboi, 5th Edition, Bangladesh Agricultural Research Institute, Joydebpur, Gazipur.
4. S.C. Panda. 2014. Agronomy, AGROBIOS Publication, New Delhi, India.
5. S.M.H. Zaman, K. Rahim and M. Howlader. 1982. Simple Lessons from Biometry, Bangladesh Rice Research Institute, 170p.
6. V.C. Srivastava. 2014. Modern Principles of Agronomy, AGROBIOS (India).