

RESEARCH TOOLS AND APPLICATIONS

Total hrs: 30

Duration: 3 months

Value added courses are part of the curriculum designed to provide necessary skills to increase the employability quotient and equipping the students with essential skills to succeed in life.

Faculty of Pharmacy, RKDF University, offers a whole variety of value added courses with the following objectives:

- (1) To provide students an understanding of the expectations of industry.
- (2) To improve employability skills of the student.
- (3) To bridge the skill gaps and make students industry ready.
- (4) To provide an opportunity to students in developing their inter-disciplinary skills.
- (5) To mold students as job providers rather than job seekers.

The value-added courses are delivered using a combination of lectures, classroom discussions, and interactive sessions. Extensive practice sessions for training students through assignments on practice exercise was included. The sections will be followed through conduct of evaluation tests to assess the understanding of the participants.

Course Description

Course duration will be of 30 lectures and after the completion of all the 30 lectures university will conduct exam as per syllabus and schemes and every qualified student will be awarded a certificate.

TOTAL TEACHING HOURS 30 (Lecture: 20 Hours, Tutorial: 05 Hours, Activity: 05 Hours)

Scheme of Examination

S.No.	Question Type	Total Number of Questions	Marks allotted	Total Marks
1	Objectives	10	01	10
2	Short-Answer Questions	05	06	30
3	Long-Answer Questions	04	15	60
4	Internal Assesments	Class Presentations, Project Report		50
	TOTAL MARKS			150

- (1) The passing requirement for value added courses shall be 50% of the total marks prescribed for the course.
- (2) The students who have successfully completed the value-added courses shall be issued with a certificate duly signed by the authorized signatory.

Unit	Details	Hours
I	Research Methodology: Research, objective, requirements, practical difficulties, review of literature, study design, types of studies, strategies to eliminate errors/bias, controls, randomization, crossover design, placebo, blinding techniques.	4
II	Data Collection, Processing:- Methods of data collection – primary data, secondary data; primary data collection – observation method, interview method, questionnaires, schedules, guideline for constructing questionnaires/ schedules, secondary data collection of, selection of appropriate method of data collection; coding, editing and tabulation of data, charts and diagrams used in data analysis, bar and pie diagrams and their significance; measures of central tendency, measures of dispersion	4
III	Data analysis: Definition, application, sample size, importance of sample size, factors influencing sample size, dropouts, statistical tests of significance, type of significance tests, parametric tests (students “t” test, ANOVA, Correlation coefficient, regression), non-parametric tests (wilcoxon rank tests, analysis of variance, correlation, chi square test), applications of z-test, t-test, f-test and chi-square test, null hypothesis, P values, degree of freedom, interpretation of P values	6
IV	Problem Identification and Hypothesis Formation - Problem- meaning and characteristics of a problem, types of problem, generality and specificity of problem; hypothesis- meaning and characteristics of a good hypothesis, types of hypotheses, formulating a hypothesis, ways of stating a hypothesis; testing experimental hypothesis- standard error, test of significance, level of significance, degrees of freedom, errors in hypothesis.	5
V	Sampling and Research Design - Meaning and types of sampling; probability and non probability sampling. methods of drawing samples, requisites of a good sampling method, sample size, sampling error; meaning and purpose of research design, types of research design, criteria of a good research design, basic principles of experimental design.	3
VI	Measurement and Scaling Techniques - Measurement in research, measurement scales sources of errors in measurement, tests of second measurement, techniques of	3

	developing measurement tools, meaning of scaling, scale classification bases, important scaling techniques, and scale construction techniques.	
VII	Regression Analysis - Simple and multiple linear regression and hypothesis testing; response surface methodology-the method of steepness ascent: response surface designs for first-order and second-order models. Evolutionary operation (EVOP)	2
VIII	Statistical Software -MS office, MS-Word, excel and power point, statistical software and their application, application of statistical tests/techniques through the use of statistical software like SPSS, SYSTAT for documentation, report generation and importance of effective communication.	3