
Office of Doctoral Studies
Course Outline

Course Structure: Software's for Social Science Research

Course Title	Software's for Social Science Research
Semester & Academic Year	Fall Semester 2026
Credits	3
Course Code	DS-E-014
Discipline/Area	Data analysis in Social Science domain
Provide details, if this course is a prerequisite for any course/specialization	General computer skills and a familiarity with charting tools like Microsoft Excel are necessary.
Name of the Faculty Member/Course Instructor	Sanjeev Yadav
Contact Details of the Faculty Member	Email: Sanjeev.yadav@jgu.edu.in Mobile: 7419867721
Faculty Member's Open Office Day/s & Time	3rd Floor South block 9B, Faculty office block, prior appointment Monday to Friday post lunch (2:00 - 6:00 PM)

INTRODUCTION

This course is design for Ph.D. and Post graduate level students who have done basic statistic courses earlier. The course is designed to familiarize the doctoral students with the advance data analysis technique. The selected case illustration will lay down the foundation that will help them to use the acquiring skills to solve research problems or have shaped and influences a research sub-stream. I personally believe that with the advancement of data analysis software skills in Social Science context has become an inevitable part of research.

COURSE OBJECTIVES 3

The objectives of this course are multifold, the students will get a chance to update their skills in the data analytics software. This course is designed to build up the advance skills necessary for research and familiarize themselves with the software which will help them in computing the most relevant information form data during their actual research.

By the end of the course one would:

- Hands on usage of qualitative as well as quantitative research methods tools.
- Knowledge of advance data analytics models and their applications
- Able to apply the acquired skills in solving assignments which will mimic real case studies of Social Sciences.

COURSE LEARNING OBJECTIVES (CLO)

The specific learning outcomes (or objectives) of the course aims to shape the attitudes of learners regarding the field of advance tools of research methods. By completing this course, the student will learn to perform the following:

CLO 1: Understand different types of research methodology and their uses.

CLO 2: Identify Problem, Formulate Research Questions and Research Design, Preparation & Refinement of Conceptual Lens, preparation of Qualitative Protocol.

CLO 3: Understating Data analysis method (primary and secondary), Bibliometric Analysis, Thematic Content Analysis.

CLO 4: Compute, interpret and apply the results of identified literature and correlations, Simple & multiple regression analysis.

CLO 5: Demonstrate an understanding of Factor Analysis, SEM and Meta Analysis.

EVALUATION SCHEMA

The course grade will be determined on the basis of

Assessment Task	Weightage	Nature
A1. End Term Exam	50%	Individual
A2. Quiz	15%	Individual
A3. Presentation/ Assignment	20%	Individual/Group
A4. Group project	15%	Individual/ Group

DESCRIPTION OF ASSESSMENTS

A1. End Term Examination is the summative take-home assessment which will be conducted by the Examination Office after the completion of the course at the end of the semester. This will cover all the 5 learning objectives.

A2. Quiz: A comprehensive quiz will be conducted on session on CLOs 1 & 2 through UMS/Moodle and will serve as a formative assessment.

A3. Presentation/Assignment: Each student has to work on an assignment or presentation to fulfil any of the 5 learning objectives. The workings and findings must be presented in front of the class via MS Teams. The presentations will be recorded for evaluations.

A4. Group Project: Each student must be a part of Group project this will also serve as a formative assessment.

TEACHING METHOD

- Students will read class material, study best and worst practices, compare and contrast real-world examples, engage in problem solving, and participate in discussions related to the course material.
- Students will also practice applying the techniques and best practices discussed to real-world problems with the help of various tools/software.
- Interactive approach of learning through online data base platform.
- Learning by doing will be the main teaching methods for this course.

TEXT BOOK DETAILS

S. No.	TITLE	AUTHOR	PUBLISHER
1	Exploring Research	Neil J. Salkind	Pearson
2	Applied Business Statistic	Ken Black	Wiley
3	Multivariate Data Analysis	Hair et al	Pearson
4	Research Methodology: Methods & Techniques	CR Kothari	New Age International Publishers
6	A concise guide to market research	Erik Mooi , Marko Sarstedt	Springer
5	Introduction to Meta-Analysis	Michael Borenstein, L. V. Hedges, J. P. T. Higgins and H. R. Rothstein	Wiley

DETAIL SESSION PLAN

Course Name: Software's for Social Science Research

Topic	Session	Reading
Software for Literature Review & Bibliometrics analysis		
Bibliometrics (VOS Viewer): Selection of database, Keyword selection, Collection of articles, Filtering (inclusion/exclusion of articles), bibliometric analysis (1) types of documents, (2) subject area, (3) authors and (4) countries. The sub-categories under authors were: (a) author's dominance factor rankings, (b) author's keywords, (c) total article citations, (d) country-wise total number of publications, (e) country-wise publications, (f) country-wise total citations and (g) collaboration networks (institutional).	1-4	<i>VOS viewer Manual (Nees Jan van Eck and Ludo Waltman)</i>
Practice exercise and hands-on experiment in class	5-7	
Software for Qualitative research methods data analysis		
Interpretive structural modelling (ISM): Publications analysis through reverse and forward technique, Filtering drivers through expert's Validation, Development of an interrelationship-based Model, developing inter-relationship between Drivers, Converting structural self-interaction matrix (SSIM) values into binary Values, Final reachability matrix (FRM) through checking transitivity from initial matrix, Conical matrix development, removing transitivity and	8-11	<i>Vitalizing logistics strategies for Tiksi Port using the interpretive structural modelling method (Contents lists available at ScienceDirect The Asian Journal of Shipping and Logistics journal homepage www.elsevier.com/locate/ajsl https://doi.org/10.1016/j.ajsl.2023.12.004)</i>

inconsistency, Calculating driving and dependence power (MICMAC analysis)		
Practice exercise and hands-on experiment in class	12-14	
NVivo 12: NVivo project registration, Upload interviews quotations with documents, Open codes development based on interviewee quotations, Codes structured with similar open codes and based on sub-themes, Matrix coding query report generation, Development of co-occurrence themes figure along with sub-themes	15-18	<i>NVIVO 10 for Windows (QSR international)</i>
Practice exercise and hands-on experiment in class	19-21	
Software for Quantitative research methods data analysis		
Fuzzy/Grey-DEMATEL: Generation of a fuzzy/Grey initial direct relational matrix, Normalisation of direct relation matrix “S”, Construct a total relation matrix T, Drawing a causal (R+C) and effect’s (R-C) maps	22-25	<i>An MCDM Approach for Evaluating Construction-Related Risks using a Combined Fuzzy Grey DEMATEL Method (https://doi.org/10.48084/etasr.6959)</i> <i>Strengthening the social performance of Indian SMEs in the digital era: a fuzzy DEMATEL analysis of enablers (DOI: 10.1108/TQM-06-2022-0193)</i>
Practice exercise and hands-on experiment in class	26-28	
Structured equation modelling (SEM): Identification hypothesis and formulating a hypothesis based combined model, preparing questionnaire based on constructs items and data collection based on the experts’ suggestion, testing common biasing, perform descriptive analysis (EFA), testing measurement model (CFA), Testing structural model (mediation and moderation), Path coefficient and hypotheses results	29-33	<i>CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting, https://doi.org/10.1016/j.techfore.2021.121092 (Ganesh Dash, Justin Paul)</i> <i>A concise guide to market research (Erik Mooi & Marko Sarstedt handbook)</i>
Practice exercise and hands-on experiment in class	34-36	
Meta Analysis through Meta-Essentials & Jamovi : individual effect sizes and the overall effect size (ES), their confidence intervals (CIs), heterogeneity statistics, and more. meta summarize can perform random-effects (RE), common-effect (CE), and fixed-effects (FE) meta-analyses, publication biasing using funnel plot.	37-41	<i>Introduction to Meta-Analysis (Michael Borenstein, L. V. Hedges, J. P. T. Higgins and H. R. Rothstein)</i>
Practice exercise and hands-on experiment in class	40-42	
Software for Referencing		
Mendeley reference manager: Manage and share research papers and to generate bibliographies for scholarly articles, Store, organize and search all your references from just one library.	43-44	<i>Mendeley Reference Management Tool (DOI: 10.13140/RG.2.1.1138.8240)</i>

Special comments on this course:

It is assumed that each student works on her/his own computer. The PhD students should install the program VOS VIEWER/ Excel/ SPSS, AMOS software's, JAMOVI, Meta essential on their laptops before the course starts.