JK LAKSHMIPAT UNIVERSITY

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JKLU

HANDBOOK

of

CURRICULUM STRUCTURE AND SYLLABUS
Post Graduate Diploma in Analysis and Research
(Programme Code: 2501)
Batch: 2021-22

Institute of Management

JKLU

Vision

To be one of India's most innovative higher education institutions.

Mission

To realise its vision, the University will:

Practice teaching that inculcates critical thinking and problem solving,

Pursue research that leads to innovation and enhancement of real-life applications,

Offer experience that leads to all round development, and

Develop a culture that is strongly rooted in interdisciplinarity and learning by building, not just doing.

Values

Caring for people.

Integrity including intellectual honesty, openness, fairness, and trust.

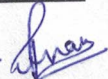Commitment to excellence.

IQAC Documentation

Document Name: Curriculum Structure and Syllabus Handbook, Post Graduate Diploma in Analysis and Research (Programme Code: 2501) - Batch 2021-2022

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Document Description: This document supplements the document titled Curriculum Structure: BBA, MBA and PGDAR Programs and is prepared by the Institute of Management (IM), JKLU to serve as an information baseline for further planning and delivery of courses w.r.t Post Graduate Diploma in Analysis and Research (PGDAR), Batch 2021-22.

It includes Program Education Objectives, Programme Outcomes, Curriculum Structure, and collation of Semester wise Course Outlines, prepared by respective faculty members. This document is in compliance with BoS (upto 11th meeting) and approvals of the Academic Council (upto 20th meeting).

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CONTENTS

Program Educational Objectives (PEOs)

The Postgraduate Diploma program offered by IM, JKLU has been designed to prepare students for a meaningful career and life-long learning. Our alumni are expected to:

PEO1: Meaningfully contribute to the organizations, economies and societies through appropriate set of knowledge, skills, attitude and behavior.

PEO2: Continue their intellectual development through critical thinking, self-study, higher education and research as well as through participation in research groups and professional networks.

Program Outcomes (POs)

Holders of Postgraduate Diploma in Analysis & Research offered by IM, JKLU will have the following competencies:

PO1: Life Long Learning
a) Demonstrate inquisitiveness, open mindedness, patience, objectivity and adaptability while carrying out scientific investigations and while engaging in independent and life-long learning.
b) Become more informed and critical consumers of information.

PO2: Citizenship, Sustainability and Professional Ethics
a) Demonstrate knowledge of constitution with an understanding of their own actions in organizational, societal and environmental contexts.
b) Demonstrate commitment for professional integrity, excellence and responsibilities as prescribed for the chosen profession.

PO3: Analytical and Research Orientation
a) Demonstrate a clear conceptual understanding of the method of scientific enquiry.
b) Exhibit sound understanding of various research approaches and methods.
c) Demonstrate scientific rigor while identifying, formulating and solving complex research problems.
d) Identify and collate relevant data and analyze it using appropriate tools and techniques for drawing substantiated inferences.
e) Respect and practice high level of research ethics as prescribed for the domain.

PO4: Communication, Critical Thinking and Problem Solving
a) Identify, formulate, review research literature and analyze complex problems to arrive at justified conclusions using critical thinking along with domain knowledge.
b) Think creatively and communicate effectively with various stakeholders.

PO5: Teamwork
a) Work effectively as an individual and collaborate with others as a team member in diverse and distributed teams across multidisciplinary settings.

PO6: Innovation
a) Demonstrate innovativeness while formulating and solving research problems as well while presenting research findings.

Curriculum Structure Post Graduate Diploma in Analysis and Research (Batch: 2021-22)

S. No.	Course Code	Course Title	Credit
Semester-I			
1	EP2270	Microeconomics	4
2	ID2173	Spreadsheet Applications in Data Analysis	2
3	CC2171	Critical Thinking For Developing Perspectives	3
4	CC2172	Academic Writing	3
5	AS2170	Probability and Statistics	4
6	AS2171	Univariate Calculus	2
7	EP2283	Introduction to Governance and Policymaking	4
Semester-II			
8	ID2180	Mathematical Thinking	2
9	ID2172	Research Design	4
10	EP2103	Macro Economics	4
11	CC2121	Critical Thinking for Problem Solving and Decisions	2
Electives#			
12	ID2171	Computer Programming	3
13	AS2172	Linear Algebra	3
14	AS2173	Multivariate Calculus	3
15	LS2104	Law & Citizenship	1
16	LS2106	Comparative Public Administration	1

CREDIT STRUCTURE

Semester	Credits	Year	Total Credits
Semester-I	22	I	36-44
Semester-II	14-22		

#Electives: A student can choose 2-4 electives in Sem-II.

Index of Course Outlines

Semester I
(Academic Year 2021-22)

Course Title: Microeconomics
Course Code: EP2270
Credit: 4
Course Instructor: Prof Vimal Kumar

Course Description:
Microeconomics is the study of how individual economic units – firms and households – make decisions and how these decisions interact to produce observed outcomes. The focus of this course will be on techniques of making optimal consumption, production and pricing decisions, and on how these decisions depend on demand, the cost of production, and the level of competition in the industry. We will study industries with varying levels of competition: perfect competition, monopoly, and oligopoly. In particular, we will learn game theory and the economics of incentives and information. Applications will include international trade, analysis of government intervention, and issues arising from market and government failures. At the end of the course we should have learned the approach of microeconomics with the ability to apply it to the questions of economics, politics, philosophy and organizations.

Course Objectives:
- To introduce students to the elements of microeconomic analysis.
- To enhance student ability to appreciate and critically evaluate economic models, and apply them to the analysis of concrete situations.

Course Learning Outcomes:
- By the end of this course, students should be able to understand:
- Demand, Supply, Equilibrium, Pareto optimality
- Elasticity and its relationship with pricing and revenue
- Economics of production
- Economic costs for decision-making
- Different types of market structures (e.g., Perfect Competition, Monopoly, Duopoly)
- Basic models of Game Theory
- Pricing
- Market Failures o Public Goods o Externalities o Moral Hazard o Adverse Selection
- The role of government in correcting market failures. Of particular interest is the effect of taxes and government policies on markets.
- Applications of economic principles to policy questions

Reading Material:
- **Microeconomics, 8th Edition, by Pindyck and Rubinfeld, Published by Pearson India.**
- **Hal R. Varian, Microeconomics**
- A set of videos at
  https://www.youtube.com/watch?v=_8T8glylBFc&index=6&list=PL-uRhZ_pBM4XnKSe3BJa23-XKJs_k4KY

Assessment Scheme:

S. No	Specifications	Marks (% Weightage)
01	Class Participation/Attendance	10
02	Quiz I	10
03	Midterm Exam	30
04	Quiz II	10
05	Final Exam	40
	Total (100)	**100**

Course Title: Spreadsheet Applications in Data Analysis
Course Code: ID2173
Credits: 2
Course Instructor: Dr. Ashwini Sharma

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Course Description:
Spreadsheet software (e.g., MS-Excel) offer tremendous functionality and plenty of in-built features that are essential for any data analysis job. Developing proficiency in the use of spreadsheet software can offer an advantage position to those who have to analyze, summarize and report data on a regular basis. The present course introduces participants with fundamental concepts of organizing, processing and presenting data. It also develops their skills in performing data management functions using Excel. Students will be able to learn about some of the most powerful features of Excel and generate useful reports using them. After successfully completing the course, they will be able to create professional-looking worksheets using MS-Excel software and at the same be ready to undertake advanced courses in the data analytics domain.

Course Learning Outcomes:
Upon successful completion, the student should be able to –
* Create, format and link worksheets using MS-Excel.
* Use formulas and functions to perform computations on data.
* Create data visualizations using different types of charts.
* Apply Conditional formatting, Perform Goal Seek Analysis, Use lookup functions.
* Create and update Pivot Tables and Pivot Charts.
* Summarize data using Histograms and Descriptive Statistics
* Run Descriptive Analytics (Using Data Analysis Toolpak)
* Perform basic Financial Arithmetic
* Determine Optimal Product Mix (Using Excel Solver)

Tentative Session Plan:

Week (Sessions)	Topic	Remarks
S1-S2	Excel Environment, Ribbon Layout, Entering and Editing Data, Worksheet Formatting and Printing _Exercise 1: XYZ Retail India_	2 Hours
S3-S4	Performing Data Computations, Creating Expressions, Use of basic Excel Functions, Formula Copying, Relative and Absolute Referencing _Exercise: Medical Office Budget_	2 Hours
S5-S6	Formula Auditing, Range Names, Sorting & Filtering, Custom Sort, Subtotal Function	2 Hours
S7-S8	Data Visualization, Charting in Excel	2 Hours
S9-S10	Financial Arithmetic Using Excel-I (Simple & Compound Interest Calculation, Computing Loan Instalments, Amortization Chart)	2 Hours

	Exercise: Personal Budget	
S11-S12	Financial Arithmetic Using Excel-II (Time Value of Money Concepts, Present Value, Future Value, Annuity, NPV Analysis, Goal Seek Analysis)	2 Hours
S13-S14	Financial Arithmetic Using Excel-II (Time Value of Money Concepts, Present Value, Future Value, Annuity, NPV Analysis, Goal Seek Analysis)	2 Hours
S15-S16	Logical and Lookup Functions	2 Hours
S17-S18	Logical and Lookup Functions	2 Hours
S19-S20	Pivot Tables and Charts, Data Analysis ToolPak, Solver	2 Hours

Reading Material:
- Most of the exercises will be based on using on-line documentation available with MS-Excel. Additional material, if required, shall be provided during sessions.

Assessment Scheme:

Component	Weightage (100)
Continuous Evaluation • **Group Assignments-25%;** • **Quiz/Exercises-10%;** • **Participation-5%**	40
Mid Term Exam	20
End Term Exam	40

Course Title: Critical Thinking for Developing Perspectives
Course Code: CC2171
Credit: 3
Course Instructor: Mr. Afreen Gani Faridi

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Course Description:
The ability to clearly reason through problems and to present arguments in a logical, and compelling way, have become a key skill for survival in today's world. In this course, students will learn to dissect and evaluate the components of argument. Students will learn to raise vital questions, think from multiple perspectives, become aware of their biases, gather and assess information and come to a well-reasoned position.

Course Learning Outcomes:
On successful completion of this course, the students should be able to:
- Explain the relevance of critical thinking
- Formulate significant questions for inquiry.
- Evaluate information and evidence for correctness, consistency, and relevance.
- Compose well-structured and well-reasoned arguments.
- Recognize their own beliefs, biases, claims and assumptions by viewing the issues from multiple perspectives

Course Syllabus:
I. Introduction to the concept of critical thinking:
· Evolution of the concept: Philosophy and Cognitive psychology as origins of critical thinking
· Revisit Paul-Elder Critical Thinking Framework
. Hegemony of Global North in Critical Studies
II. Questioning for Critical Thinking
· Importance of questioning
· Models of Questioning: Questioning Circles Model, Christenbury and Kelly (1983), Webb's Depth of Knowledge (1997). Elder & Paul (2007). Socratic Questioning Taxonomy.
. Questioning as a mode of Accountability
III. Understanding Arguments
The sessions under this topic will make use of the context of current media, social and political debates to comprehend the topics.
· Meaning and Elements of Reasoning
· Formation of Arguments: Premise and Conclusion
· Inductive –Deductive reasoning: Difference between valid and invalid arguments/ between sound and unsound arguments.
· Evaluating Arguments: Examining data and information critically
· Cognitive Biases and Fallacies: Distinguishing between fact and opinion
. Ideological bias in Facts & Data

Readings/Video(s)
1. The Evolution of Critical Thinking (Research project by Barba Albers, Washington, State University ,2004

2. Bowker, M. H., & Fazioli, K. P. (2016). Rethinking Critical Thinking: A Relational and Contextual Approach. Pedagogy and the Human Sciences, 6(1), 1-26.

3. Bauer, N. J. (1991). Dewey and Schon: An Analysis of Reflective Thinking.

4. Nappi, J. S. (2017). The importance of questioning in developing critical thinking skills. Delta Kappa Gamma Bulletin, 84(1), 30.

5. https://cpb-us e1.wpmucdn.com/cobblearning.net/dist/6/3101/files/2018/05/The-Importance-of-Questioning-2aqkc5j.pdfBloom, B. S. (1956). Taxonomy of educational objectives. Vol. 1: Cognitive domain. New York: McKay, 20-24.

6. Paul, R., & Binker, A. J. A. (1990). Socratic questioning. Critical thinking. Center for Critical Thinking and Moral Critique.
http://www.criticalthinking.org/files/SocraticQuestioning2006.pdf

7. The Art of Asking Questions | Dan Moulthrop | TEDxSHHS
https://www.youtube.com/watch?v=hZSY0PssqH0

8. Analysing the argument -
https://courses.lumenlearning.com/englishcomp1/chapter/analyzing-arguments/

Assessment Scheme:

S. No	Specifications	Marks
01	Assignment	30
02	Class Participation	20
03	Presentation	10
04	Research Proposal	10
05	Theory Exam-III	30
	Total (100)	**100**

Evaluation scheme for Re-test

S.No	Specifications	Marks
1	Theory Exam (Re-test)	30

Course Title: Academic Writing
Course Code: CC2172
Credit: 3
Course Instructor: Dr. Sonal Jain/Dr. Gustavo Sanchez/Dr. Upasana Singh

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Course Description:
Although they follow a well-defined format, writing scientific articles and getting them ready to be published, can be a difficult task. This course focuses on practicing necessary skills to write good academic prose.

Learning Outcomes:
On successful completion of this course, participants should be able to:
1) Write a scientific article to communicate about their research
2) Assess the quality of academic writing
3) Prepare a scientific article for publication, using different computational tools

Syllabus:
1. **The scientific paper**. Sections: Title, Authors/Affiliation, Abstract, Introduction, Materials and methods, Results, Discussion, Conclusion, References, Bibliography, Footnotes, Appendix and Acknowledgements.
2. **Tools and techniques for academic writing**. Basic guidelines for text, equations, tables, figures, legends, graphs, quotes, references, captions, journal formats, etc. Using version control tools, using reference management tools.
3. **Preparing to publish**. Rewriting, final manuscript preparation, analyzing written arguments and responding to referees. Ethics in research and publication. Plagiarism checkers, Peer Review Process, Social Impact, Ensuring Visibility

References:
[1] E. Wager and S. Kleinert, "Responsible research publication: international standards for authors. A position statement developed at the 2nd World Conference on Research Integrity," presented at the Promoting Research Integrity in a Global Environment, 2011.
[2] S. A. Socolofsky, "How to write a research journal article in engineering and science," p. 17.
[3] M. J. Katz, From research to manuscript: a guide to scientific writing. Dordrecht, The Netherlands: Springer, 2006.
[4] Zemach Rumisek. Academic Writing, 2005. Macmillan ELT
[5] S. Bailey, Academic writing: a handbook for international students. London; New York: Routledge Falmer, 2004.
[6] I. Leki, Academic writing: exploring processes and strategies, 2. ed., 13th print. Cambridge: Cambridge Univ. Press, 2009.
[7] S. Kaye, Writing under pressure: the quick writing process. New York: Oxford University Press, 1989.
[8] E. J. Rothwell and M. J. Cloud, Engineering Writing by Design: Creating Formal Documents of Lasting Value, 1st ed. CRC Press, 2017.
[9] Silvia, P. J. 2015. Arcana and miscellany: From titles to footnotes. Write it up: Practical strategies for writing and publishing journal articles: 157-174. Washington, DC: American Psychological Association.
[10] Ballinger, G. A. & Johnson, R. E., 2015. Editor's comments: Your first AMR review. Academy of Management Review, 40(3): 315-322.

[11] Kamler, B. 2008. Rethinking doctoral publication practices: Writing from and beyond the thesis. Studies in Higher Education, 33(3): 283-294.

[12] Alvesson, M. & Sandberg, J. 2011. Generating research questions through problematization. Academy of Management Review, 36(2): 247-271.

IT Resources:

Elsevier Researcher Academy: https://researcheracademy.elsevier.com/

Coursera. Academic English: Writing. University of California, Irvine. https://www.coursera.org/specializations/academic-english

Assessment Scheme:

Component	Weightage (100)
Assignment	30
Quiz	30
Report-3	40

Course Title: Probability and Statistics
Course Code: AS2170
Credit: 4
Course Instructor: Dr. Umesh Gupta

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Course Description:
This course will introduce various statistical topics such as probability, descriptive statistics, statistical inference, sampling distributions, point and interval estimates, regression analysis with applications drawn from diversified areas including economics, business, public policy and governance, health etc. Statistical computing includes calculations using the Microsoft Excel.

Course Learning Outcomes:
1. use graphical and numerical methods to calculate and illustrate descriptive statistics;
2. analyze and interpret different datasets using discrete and continuous probability distributions and apply the same for problem solving;
3. formulate and validate parametric hypothesis with reference to different datasets;
4. apply regression analysis for modeling, analysis, interpretation and forecasting;
5. use the probability models that are most widely used in economics, and apply them correctly and carry out the appropriate statistical analysis;
6. assess the accuracy of the resulting estimates and conclusions;
7. use Excel to make basic statistical calculations and critically evaluate the basis for these calculations

Syllabus
- Frequency Distribution- discrete and continuous, diagrammatic and graphic representation, Graphs – histograms, frequency polygon, cumulative frequency curves/ ogives; Measures of central tendency and dispersion
- Probability theory - classical and axiomatic approaches, conditional probability, Bayes theorem, random variables, Probability distribution – discrete and continuous distribution
- Study design- Scientific method, Measurements, Basics of data collection
- Sampling theory- Basics of sampling, sampling distribution of the mean, variance and proportion, degrees of freedom, central limit theorem; Estimation- point estimation, confidence interval
- Hypothesis testing- Type I and II errors, significance testing, parametric hypothesis concerning mean, variance and proportion for single sample, two independent and paired samples
- Regression analysis- linear regression, standard error of the estimate, Pearson's correlation
- MS Excel- application of basics statistics, graphs and charts, hypothesis testing, regression analysis

Text Book:
1. David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, Jeffrey D. Camm, and James J. Cochran, Statistics for Business and Economics, 12th Edition, Cengage India, 2018

Reference Books:

1. David M. Lane, David Scott, Mikki Hebl, Rudy Guerra, Dan Osherson, and Heidi Zimmer, Introduction to Statistics, Online edition
2. James T. McClave, P. George Benson, and Terry Sincich, Statistics for Business and Economics, 13th Edition, Pearson, 2018
3. Richard J. Larsen, and Morris L. Marx, Introduction to Mathematical Statistics and Its Applications, 4th ed. Upper Saddle River, NJ: Pearson Prentice Hall, 2005
4. David M Levine, David F. Stephan, Timothy C Krehbiel and Mark Berenson, Statistics for managers: using Microsoft excel, 6th Edition, PHI Learning India, 2012
5. Ken Black, Business statistics for contemporary decision making, 5th Edition, Wiley India, 2009

Online Course Reference:

Basic Statistics *offered by University of Amsterdam on* **Coursera***:*
https://www.coursera.org/learn/basic-statistics?action=enroll

Assessment Scheme

Sr. No	Specifications	Marks
01	Quiz*	40
02	Assignment	10
03	Theory Exam-II	20
04	Theory Exam-III	30
	Total (100)	**100**

*Quiz score will be referred from course running on Coursera. Course details are provided in reference section.

Course Title: Univariate Calculus
Course Code: AS2171
Credits: 2
Course Instructor: Ms. Manushi Gupta

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Course Objective:
This course is aimed to learn and understand the fundamental concepts of Functions, Limits and Continuity, Differentiation and Integration with application to real life problems of rate of change, approximation and extremum problems

Learning Outcomes:
On successful completion of this course, the students should be able to:
1. Work with functions represented in a variety of ways like graphical, analytical etc.
2. Demonstrate the concepts of limit and continuity both graphically and mathematically.
3. Compute derivatives of elementary functions and demonstrate them analytically and graphically.
4. Apply the concepts of derivative in various problems of rate of change and approximation, and solve extremum problems of economics
5. Compute definite and indefinite integrals of elementary functions and understand the relation between differentiation and integration.

Syllabus (Theory):
- **Functions** – polynomial functions, rational functions, exponential functions and logarithmic functions, limit and continuity of functions.
- **Differential calculus** - derivative as the rate of change, rules of differentiation (product rule, quotient rule and chain rule), approximation, applications of differentiation in extremum problems of one variable.
- **Integral calculus** - Definite and Indefinite Integration, relation between integration and differentiation, The Fundamental Theorem of Calculus.

Textbook
1. James Stewart, "Calculus ", 7th Ed., Brooks/Cole Cengage Learning, 2015.

Reference Books
1. Chiang, A.C., Fundamental Methods of Mathematical Economics, Mc Graw Hill.
2. Simon, C.P. and Blume, L., Mathematics for Economics, Viva.

Online Course Reference:
Introduction to Calculus offered by The University of Sydney on Coursera
http://www.coursera.org/learn/introduction-to-calculus

Assessment Scheme

Sr. No	Specifications	Marks
01	Quiz*	40
02	Assignment	10
03	Theory Exam-II	20
04	Theory Exam-III	30
	Total (100)	**100**

*Marks of quiz will be captured from the corresponding Coursera course.

Retest Evaluation Scheme

Theory Exam (End Term)	30
Total (30)	**30**

Course Title: Introduction to Governance and Policymaking
Course Code: EP2283
Credit: 4
Course Instructor: Ms. Chitranjali Tiwari

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Course Description
This course is divided into two broad segments – Governance and Policymaking.

The goal is to use political science and economics to understand the different political institutions and processes in Indian government that play a critical role in policymaking. In Policymaking, the aim is to understand what public policy is, the process and challenges in different stages of policymaking in India. The students will work on a real policy issue of their choice right from problem identification, stakeholder management and policy implementation. This course exposes them to the jargons of public policy and frameworks used by policymakers with the help of case-studies, guest speaker sessions, and workshops.

Course Objectives
To introduce public policy and governance in order understand the functioning of Indian government and politics.

Course Learning Outcomes
Students should be able to understand the following:
1. An analytical treatment that helps understand Indian government and institutions
2. The logical inferences that flow from the assumption that political actors work in self-interest.
3. The role of collective action and institutional arena in which collective action unfolds.
4. Why do the governments govern the way they do?
5. Steps in policymaking and challenges

Pedagogy
Lecture, Discussion and Presentations. Advance reading of the assigned material is a must for each class.

Academic Integrity
You are required to abide by the standards of academic integrity in force at the School. You are not allowed to collaborate in exams, and you must not, under any circumstance, submit someone else's work as your own. If you quote a sentence or even half a sentence, you must place it in quotes while duly citing the source.

Course Content
Session 1- 14th October – Introduction to Policy Processes (Part I)
Session 2 -21st October – Coursera "Public Policy Challenges in 21 st Century"
Session 3 -28th October – Guest session by Al, UMass Amherst
Session 4 -4th November – Coursera "Digital Governance"
Session 5 -11th November – Guest session by Ethan Zuckerman, UMass Amherst
Session 6 -18th November – Guest session by Ajay Shankar
Session 7 -25th November – Class activity – Movie analysis "Please Vote for Me"
Session 8- 2nd December – Coursera "Media Ethics and Governance"
Session 9 -9th December – Policy processes (Part II)

Session 10 -16th December – End of class PPT and Learnings

Evaluation Scheme:

Component	Weightage (100)
Class Participation	25
Presentation	35
Assignments	40

Semester II
(Academic Year 2021-22)

Course Title: Mathematical Thinking
Course Code: ID2180
Credit: 2
Course Instructor: Dr. Yugank Goyal

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Course Description:
The purpose of this course is to explore mathematics as an idiom of thought. This idea goes further from understanding math as merely a technique, and explores the subject as an independent mode of inquiry. Students often believe they dislike mathematics by the time they come to college. Some students fear math. Some just loathe it. This course aims to bring mathematics to the students, as it philosophically is, not what it appears to be. In other words, the objective of the course is to develop sensitivity and appreciation towards logical reasoning which is manifested in looking at the world through numbers, frames, quantitative design and therefore develop interest in math-based subjects that student may want to engage in, later. That said, the course may not act as a prerequisite for other advanced courses relying on mathematics, but it definitely forms an introduction to mathematical thinking, to generate interest in it in the first place. It frames solid base of applying mathematics in everyday thinking.

The course will demonstrate how mathematics is the language of nature. Students will approach mathematics not only as a set of problems, but also as a natural as well as social phenomenon. The course will also approach mathematical inquiry as a means for exploring both the physical sciences and social sciences with examples ranging from genetics, computer science, linguistics, design, abstract reasoning, cartography, formal and informal logic. The course does not assume students to have had a background in mathematics, and therefore has a foundational promise, with swift possibilities to build advanced concepts over them.

Course Learning Outcomes:
Students, by te end of the course shoud be able to think and develop mental faculties with respect to the following frames of imagination:
 a. Inductive and deductive reasoning
 b. Building a mathematical formulation or a picture in head, about a non-mathematical problem
 c. Heightened sensitivity towards understanding logic
 d. Abstract thinking about infinitesimally small distances, and theorize on thought experiments
 e. Idea of randomness
 f. Create distorted representation of pictorial figures if asked
 g. Tricks to find the important idea amongst all the good and bad ideas bundled up together
 h. Basic mathematical literacy to understand some symbolic representation
 i. Ability to convert symbols into sentences and the other way round
 j. Question and critique on logic
 k. Sensitivity for proofs
 l. Perceive the foundational applications of AI, ML
Appreciate the nondeterministic nature of this world, alongside powers of numerical precision

Course Content/Topics to be covered:

During the ten sessions of the course we will address a number of key areas in mathematical thinking. The objectives will be to both understanding how math assists thinking, as well as how the mechanics of various problem types are best approached and solved.

Session One: Mathematics in Nature (2 hours)
- Introduction to the Course
- Appreciating how mathematics is a language of nature, its presence around us and identifying it,
- Logic and Coding processes of the mind
- Math as a way of thinking

Session Two: Logic (2 hours)
- Using logic to interpret meanings, words, and symbols,
- deductive and inductive logic,
- Critical Thinking
- Evolution of mathematics, as a priori knowledge
- Paradoxes in Mathematics

Session Three: Number System (2 hours)
- Number systems (position holders and otherwise)
- Idea of base in number systems
- Calculating if base is different

Session Four: and Set Theory (2 hours)
- Understanding sets, and seeing the application
- Logic through Venn diagrams
- Hilbert's program and Gödel's incomplete theorem
- Russel's Paradox
- Cantor's Diagonal Proof

Session Five: Graph Theory and p vs np problem (2 hours)
- Graph theory with Euler's diagrams
- Hamiltonian Paths
- Imagining and drawing graphs
- Applications in cartography
- P vs. NP problems (using Hamiltonian path understanding)

Session Six: Geometry (2 hour)
- Understanding axiomatic approach
- Finding geometric proofs using deductions and why it works best
- Basic understanding of dimensions
- Non-Euclidean geometry

Session Seven: Fair Distribution (2 hours)
- Dividing up when equal division is not possible
- Dividing up in 2, 3, or n unequal but fair parts

Session Eight: Introduction to philosophy of calculus (2 hours)
- Why rate of change and what makes them powerful in mathematical thinking,
- Need for thinking about infinitesimally small values
- Limits to a value, and difference from the value itself
- Simple derivation to get a sense
- Why is derivative nothing but the slope of the curve

Session Nine: Voting Methods (2 hours)
- Weighted voting (designing systems of voting)
- Various types of voting methods (majority, plurality, instant runoff, Borda Count etc.)
- Arrow's Impossibility Theorem

Session Ten: Complex Adaptive Systems (2 hours)
- Randomness and nonlinearity
- Chaos Theory
- Concept of complex adaptive systems
- Evolution and its wisdom
- Genetic Algorithm
- Introduction to Cellular Automata

References (Textbooks/case studies/articles):
These are only indicative.

1. Angel, A. R., & Porter, S. R. (2009). *A survey of mathematics with applications*. Pearson Addison Wesley.
2. D.J. Struik (1942), On the Sociology of Mathematics, *Science & Society*, Guilford Press
3. Dantzig, T. (2007). *Number: The language of science*. Penguin.
4. Edward Burger and Michael Starbird (1999), *The Heart of Mathematics: An Invitation to Effective Thinking*, Key College
5. G.H.R. Parkinson and H.G. Shanker, *Routledge History of Philosophy: Philosophy of Science, Logic and Mathematics in the 20th Century*, London: Routledge (select chapters)
6. Gel'fand, S. I. et. al. (2002). *Sequences, combinations, limits* (Vol. 3). Courier Corporation.
7. Gerard Alberts (1994), On Connecting Socialism and Mathematics: Dirk Struik, Jan Burgers and Jan Tinbergen, *Historia Mathematica*
8. H.J.M. Bos and H. Mehrtens (1977), The Interaction of Mathematics and Society in History Some Exploratory Remarks, *Historia Mathematica*
9. Jack C. Gill & Robert Blitzer, *Competency in College Mathematics,* H&H Publishing, Clearwater Florida (select chapters)
10. John Tabak, *Mathematics and the Laws of Nature: Developing the Language of Science*, New York: Facts on File
11. Karl J. Smith, *The Nature of Mathematics* (12e), Little, Brown
12. Keith Devlin (2012), *Introduction to Mathematical Thinking*
13. Kline, M. (1967). *Mathematics for liberal arts*. Addison-Wesley Pub. Co..
14. Marcia Ascher (1984), Mathematical Ideas in Non-western Culture, *Historia Mathematica*
15. McGinnis, R. (1965). *Mathematical foundations for social analysis*. The Bobbs-Merrill.
16. Mitchell, Melanie (2009). *Complexity: A guided tour*. Oxford University Press.
17. Ore, O. (1990). *Graphs and their uses* (Vol. 34). Cambridge University Press.
18. Paulus Gerdes (1994), On Mathematics in the History of Sub-Saharan Africa, *Historia Mathematica*

19. Polya, G. (1954). *Induction and analogy in Mathematics*, Princeton University Press
20. Polya, G. (2014). *How to Solve It: A New Aspect of Mathematical Method: A New Aspect of Mathematical Method*. Princeton university press.
21. Sarukkai, S. (2005). Revisiting the 'unreasonable effectiveness' of mathematics. *Current science*, *88*(30), 415-423.
22. Sarukkai, S. (2003). Applying mathematics: The paradoxical relation between mathematics, language and reality. *Economic and Political Weekly*, 3662-3670

Evaluation Scheme:

Component	Weightage (100)
Mid Term (Test)	30
Class Participation	30
End Term Exam	40

Course Title: Research Design
Course Code: ID2172
Credit: 4
Course Instructor: Dr. Ashwini Sharma

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Course Description:
Research in Social Sciences allow scholars to make a better sense of the world around them. It helps them to look for answers to the questions that why people and institutions behave in the manner they do. It also helps them in becoming informed consumers of research findings and enable them to critique the literature. The objective of this course is to introduce participants to various elements of a research project starting from the methodological foundations to ethical considerations. Beginning with introducing the philosophy of scientific enquiry, it equips them with necessary knowledge and skills to identify and formulate a research problem, frame research questions and develop hypotheses, select the variables and their measures, make considerations about the validity and reliability of measures, select the appropriate research design, and ultimately prepare a research proposal. Intermediate issues like sampling, design and analysis considerations, as well as those of research validity are adequately dealt with as the course progresses.

Course Learning Outcomes:
Upon successful completion, the student should be able to:
- Demonstrate an understanding of various stages of scientific research
- Evaluate and synthesize research material to identify relevant areas of research
- Critically analyze and demonstrate an ability to formulate viable research questions
- Compare and contrast between various research methodologies
- Prepare a research proposal

Course Content:
- Foundations
    - Philosophy, Characteristics and Method of Scientific Research
    - Meaning and definition of research, Inductive vs Deductive reasoning
    - Types of research studies
    - Variables, Hypotheses and their types
    - Stages in Research
- Theory of Measurement
    - Measures and Measurement, Types of Data, Scales of Measurement
    - Validity and Reliability Issues
    - Threats to Reliability and Validity
- Sampling
    - Probabilistic & Non-probabilistic Sampling
    - Various common sampling techniques
    - Sampling Size Issues and Representative Samples
    - Concept of Sampling Distribution and Standard Error
- Survey Research and Scaling
    - Nature of Survey Research
    - Tools for Data Collection
    - Questionnaire Construction

- o Scales and their types
- o Scale Development

- Experimental Research Design
  - o Relationships and their types
  - o Characteristics of Causal relationships
  - o Types of research designs
  - o Main Effects vs Interaction Effects
  - o Mediation vs Moderation

References:
i) *Business Research Methods* by William G Zikmund
ii) *Research Methods for Business: A Skill-building Approach* by Roger Bougie and Uma Sekaran
iii) *Business Research Methods* by Donald R. Cooper
iv) *Research Methodology: Methods & Techniques* by C.R. Kothari

Shadow MOOC
Quantitative Methods by University of Amsterdam (Coursera.org)

Assessment Scheme:

S. No	Specifications	Marks (% Weightage)
01	Class Participation/Attendance	20
02	Quizzes (Two, One each after 15-20 hours)	30
03	Assignments/MOOCs/Research Proposal	30
04	Viva	20
	Total (100)	**100**

Course Title: Macro Economics
Course Code: EP2103
Credit: 4
Course Instructor: Dr. Sheetal Mundra

Course Description

This course introduces the students to the concept of macroeconomic, theories, objectives, andinstruments.Itexposesstudentstoanoverviewofanexchangebasedeconomyanddraws out the relationship between crucial macroeconomic variables like the consumption, national income, employment, prices, investment, money supply, trade and forex etc. The design of government policy measures in regulating and planning for the economy will be discussed. Specific problems like inflation, growth and the control of business cycles will be addressed, with respect to Indian economy. The course focuses on how the external factors and policy issuesaffecttheoperationofaneconomyandwhymanagersneedtounderstandthedynamics oftheeconomyatfirmlevelsoastooperateaccordinglyinchangingeconomicenvironment.

Course Objectives

To equip students with basic concepts of macroeconomic analysis, their interplay and role of government policies for understanding the macroeconomic environment and make them more astute and responsible participants in the economy.

Course Learning Outcomes

Upon successful completion of the course, the students should be able to:

- Describe the different concepts, tools and techniques of macroeconomic analysis and how the economy functions as awhole.
- Analyse various macroeconomic variables and their interdependence and interrelation with each other like income, saving, consumption, investment, money, rate of interest and multiplier etc.
- Reason out the basic problems of an economy which have been faced by the countries and policy makers over time like achieving high rate of growth, controlling inflation, preventing business cycles and solving problems of unemployment.
- Interpret monetary policy and Fiscal policy in Indian context.
- Evaluate and compare the economies of developing and developed countries with respect to certain key macro-economic variables such as inflation, exchange rate, BOT and BOP, Employment due to contemporary event.
- Understand the key concepts of Indian economy for analyzing the impact of macroeconomic variables across key sectors of the economy.

Course Content

1. Micro & Macro Paradoxes, Historical Development of Macro, Macroeconomic Basics
2. Measuring National Income
3. Measuring Cost of Living
4. Aggregate Demand and Aggregate Supply
5. The Influence of Monetary and Fiscal Policy on Aggregate Demand
6. The Monetary System
7. Money Growth and Inflation
8. Unemployment
9. The Short Run Tarde-off between Inflation and Unemployment
10. Open-Economy Macro Economic Basic Concepts
11. Basic Concepts of Indian Economy

Text Book and additional reading material

Mankiw, Gregory N. (2019). Principles of Macro Economics. New Delhi: CENGAGE Learning.

Additional reading material

1. Colander (2017). Macroeconomics, 9/e (Indian Edition). Chennai: Tata McGraw Hill.
2. Dwivedi, D. N. (2018). Macroeconomics: Theory and policy, 4/e. New Delhi: Vikas Publishing House Pvt. Ltd.
3. Samuelson P. A., Nordhaus, W.D. (2017), adapted by Sudip Chaudhuri. Macro Economics. 19/e. New Delhi: Tata McGraw Hill.
4. Ahuja, H.L. (2017). Principles of Economics. New Delhi: S. Chand & Co. Pvt. Ltd.
5. www.economist.com
Note: Latest edition of the readings will be used.

Assessment Scheme:

Assessment Components	% Weightage
Mid Term Exams	20%
End Term Exams	40%
Quiz/ test	20%
Article/ Assignment presentation On major macro-economic variables by understanding the current articles in flipped classroom mode	20%

Course title: Critical Thinking for Problem Solving and Decisions
Course code: CC2121
Credits: 2
Course Instructor: Afreen Faridi

Course Description

In today's world, the idea of right and wrong is being challenged by businesses, use of technology, economic conditions, and norms of societies. The relevance of a well-reasoned decision is crucial. This course intends to make students take better decisions keeping in mind purpose, context, and ethics.

Course Outcomes:

On successful completion of this course, the students should be able to:

- Describe how to think critically and solve problems.
- Apply advocacy and enquiry to analyze organizational problems.
- Improve critical thinking and questioning skills.
- Analyze the context and information to identify a problem.
- Make use of problem-solving methods and tools.

Course Syllabus:

- Definition and Type of Decision Making
- Decision-Making Processes
- Ethical approaches and Decisions
- The significance of purpose and context
- Techniques for problem analysis
- Techniques for Decision Implementation
- Obstacles to Sound Reasoning
- Examining alternate solutions

Readings/Video(s)

1. Lehrer, J. (2010). How we decide. Houghton Mifflin Harcourt.
2. Heath, C., & Heath, D. (2013). Decisive: How to make better choices in life and work. Random House.
3. Hammond, J. S., Keeney, R. L., & Raiffa, H. (2015). Smart choices: A practical guide to making better decisions. Harvard Business Review Press.
4. Cases and scenario will be shared in the class

Evaluation Scheme

Component	Weightage (100)
Assignment	40
Class Participation	20
Lab Evaluation-I	20
Theory Exam-III	20

Evaluation scheme for Re-test

Sr. No	Specifications	Marks
1	Theory Exam (Re-test)	30

Course Title: Computer Programming
Course Code: ID2171
Credit: 3
Course Instructor: Mr. Suman Saha

Course Objective:
The aim of the course is to build up a clear understanding of the fundamentals of Python programming. The course will discuss and cover the topics necessary for the students to write and execute the programs on their own.

Course Learning Outcomes:
On successful completion of this course, the students should be able to:
1. Write pseudo code for computable problem.
2. Use lists, tuples, and dictionaries in Python programs.
3. Identify Python object types.
4. Design structure and components of a Python program.
5. Use Python Control and Decision making Structures for writing programs
6. Write long iterative programs into recursive code.
7. Build programs that related to text analytics.
8. Build small graphics and animation programs.
9. Read and write files in Python.
10. Use Data Handling Techniques of Python
11. Use exception handling in Python applications for error handling, find syntax errors

Course Content:
- *Algorithms and Program Development*: Pseudocode, Algorithm, Algorithm Features, Developing an Algorithm, Programming Logic, Readability, Robustness, Correctness,Strategies for Program Design
- *Fundamentals of Python*: Beginnings with Python, Parts of a Program: Modules, Statements and Expressions, Whitespace, Comments, Special Python Elements: Tokens, Naming Objects, Variables, Objects and Types, Operators;
- *Control*: The Selection Statement for Decisions: if,
- Repetition: for Statement, In-Depth Control: Boolean Variables, Relational Operators, Boolean Operators, Precedence, while Statement, Nesting, Recursion;
- *Functions*: What Is a Function? Python Functions, Flow of Control with Functions, Scope, Arguments, Parameters, and Namespaces, Default Values and Parameters, Functions as Objects;
- *Files and Exceptions*: What Is a File?, Accessing Files: Reading Text Files, Accessing Files: Writing Text Files, Reading and Writing Text Files in a Program, File Creation and Overwriting, Handling Errors: Error Names,

The try-except Construct, try- except Flow of Control, Exception;

- *Strings*: The String Type, String Operations, Formatted Output for Strings;
- *Lists and Tuples*: What Is a List? Iteration, Indexing and Slicing, Operators, Lists vs Strings, Split and Other Functions and Methods, Anagrams, Tuples from Lists, Python Diversion: List Comprehension;
- *Dictionaries and Sets*: Dictionaries, Python Dictionaries, Dictionary Indexing and Assignment, Sets, Python Sets, Methods, Operators, and Functions for Python Sets, Set Methods;
- Introduction to *Classes*: Object-Oriented Programming, Characteristics of OOP, Class and Instance, Object Methods, Fitting into the Python Class Model, Python and OOP, Python and Other OOP Languages, Classes, Types, and Introspection, Inheritance

Reading Material:
1. William Punch, Richard Enbody, 'The Practice of Computing Using Python'. Pearson, 2016

2. Eric Matthes, Python Crash Course: A Hands-On, Project-Based Introduction to Programming, No Starch Press

3. Mark Lutz, Learning Python, O'Reilly

Assessment Scheme:

S. No	Specifications	Marks
01	Assignment	30
02	Quiz	20
03	Lab Evaluation-I	25
04	Lab Evaluation-II	25
	Total (100)	**100**

Course Name: Linear Algebra
Course Code: AS2172
Credit: 3
Course Instructor: Prof. Sandeep Singh

Course Objective:
This course introduces matrix theory, basic Linear Algebra Principles and Linear Programming Problem. Students are also expected to gain an appreciation for the applications of linear algebra and LPP to area such as economics, social sciences, business, public policy and governance, health etc.

Course Learning Outcomes:
On successful completion of this course, the students should be able to:
1. Interpreting complex situations in various domains using Linear Algebra.
2. Model complex systems as Linear simultaneous equations and analyze the same using Matrix methods
3. Model Data as matrices then able to determine Determinant, Eigen Values and Eigen Vectors and Apply the same for problem solving, e.g., ranking and performance analysis summarize and visualize different datasets.
4. Identify parameters or variables to formulate cost or profit function for sustainable use of available resources.

Course Content:
- Matrices: Matrix algebra, Matrix Operations, Matrix addition, Matrix subtraction, Scalar multiplication, Matrix multiplication, Matrix inverses, Powers of a matrix, Determinants, Cramer's rule, Inverse matrices, Rank of a Matrix, Elementary row operations, Echelon forms eigenvalues and eigenvectors, Systems of linear equations
- Vector Spaces and Subspaces, Bases and Dimensions, Linear Transformations, Linear Independence and Dependence, Orthogonality

Reading Material:
1. Hoy, M., Livernois, J., McKenna, C, Rees, R and Stengos, T, Mathematics for Economics, PHI, third edition, 2014.
E-books:
1. Fuad Aleskerov, Hasan Ersel, Dmitri Piontkovski, Linear Algebra for Economists. Springer, 2011.
2. Gilbert Strang. Introduction to Linear Algebra. Wellesley-Cambridge Press, 4th edition, 2009.
3. Murthy, P. R., Operations Research, Second Edition, New Age International, 2007.
Reference Books
1. Shayle R. Searle, Lois Schertz Willett, Matrix Algebra for Applied Economics, 1st Edition, John Wiley & Sons, 2001.
2. Serre Denis, Matrices Theory and Applications, Springer, 2010.
3. Taha. H. A, Operations Research: An Introduction, Pearson Education, 7th ed., 2003.

Assessment Scheme:

S. No	Specifications	Marks
01	Assignment	15
02	Class Participation	5
03	Quizzes	5
04	Mid Term	20
05	End Term	30
06	Project Work	25
	Total (100)	**100**

Course Title: Multivariate Calculus
Course Code: AS2173
Credit: 3
Course Instructor: Minnie Kabra

Course Objectives:
This course is aimed to provide the students
- the fundamental concepts of functions of several variables, partial differentiation, multiple integrals, and application of these concepts in real life problems of rate of change, approximation, constrained and unconstrained maxima-minima
- the skills of vector calculus operations, understanding of vector fields, Green's Theorem, Divergence Theorem and the Stokes theorem.

Course Learning Outcomes:
 On successful completion of this course, students will be able to
- investigate the limit and continuity of a function of several real variables at any pointor over a specified region.
- compute partial derivatives of a function of several real variables and find thestationary points of a function of several real variables.
- utilize the method of Lagrange multipliers to calculate relative extrema subject togiven constraints.
- transform functions from the Cartesian coordinate system to polar, cylindrical andspherical polar coordinate systems.
- transform multiple integrals into different curvilinear coordinate systems andevaluate the resulting integrals.
- formulate and evaluate double integrals to calculate surface area
- find directional derivatives and gradients of scalar functions.
- evaluate line integrals through scalar or vector fields and provide physicalinterpretations of these integrals.
- use Green's, divergence, and Stokes' theorems

Course Content:
- **Partial derivatives:** Functions of Several Variables, Limits and Continuity, Partial Derivatives, Tangent Planes and Linear Approximations, The Chain Rule, Directional Derivatives and the Gradient Vector, Maximum and Minimum Values, Lagrange Multipliers.
- **Multiple integral:** Double Integrals over Rectangles, Double Integrals over General Regions, Double Integrals in Polar Coordinates, Applications of Double Integrals, Surface Area, Change of Variables in Multiple Integrals.
- **Vector calculus:** Vector functions of a real variable and their derivatives, Vector fields, Line integrals, The Fundamental Theorem for Line Integrals, Green's theorem, Curl and Divergence, Parametric Surfaces and Their Areas, Surface Integral, Stokes' Theorem, The Divergence Theorem.

Reading Material:
 James Stewart, "**Calculus: Early Transcendentals**", Brooks/Cole, 8th Ed., 2015

Reference Book:

Geoff Renshaw, "Maths for Economics", Oxford (Indian Edition) 2nd Ed., 2009

Assessment Scheme:

S. No	Specifications	Weightage (in %)
01	Assignments	40
02	Mid Sem	20
03	End Term Exam	40
	Total (100)	**100**

Course Name: Law & Citizenship
Course Code: LS2104
Credit: 1
Course Instructors: Prof. Apurv Mishra

Course Objective:

You are a citizen. Which means you don't just possesses legal rights and responsibilities in relation to a particular government, but rather you are a member of one or more communities that you want to improve. Your communities may range from a block of houses or a single institution to the entire planet. The seminar on Law and Citizenship will equip you to fulfill this role of a public-spirited citizen. We will study issues that directly affect the lives of millions of citizens in context of accompanying legal frameworks. All these lectures are different but they all take the perspective of the citizen, draw on and enrich practical experience, and aim for a combination of facts, values and strategies that work in India.

The seminar focuses on the following three themes:
I. Why You Matter: Rights and Duties of Citizens
II. How to Matter: Advocacy on Challenging Issues
III. What Matters Now: Revisiting Citizenship in 21st century

Course Learning Outcomes:
1. Understand the changing nature of the relationship between citizen and state in India
2. Appreciate the key role of Indian constitution in strengthening democracy in the country
3. Recognize the role of Indian judiciary as a protector citizens' rights
4. Acknowledge the importance of instruments like PIL and RTI in promoting good governance in India
5. Learn the skill of filing RTI applications to hold public institutions accountable
6. Introduction to fundamental concepts of public policy

Course Content:
1. Fundamental Rights and Duties
2. Directive Principles of State Policy
3. Basic Structure Doctrine
4. Public Interest Litigation
5. Right to Information Act
6. Transforming Good Ideas into Good Legislation- An Introduction to Public Policy

Assessment Scheme:

S. No	Specifications	Marks
01	In Class Quizzes (4)	60
02	RTI Assignment	40
	Total (100)	**100**

Reading Material:

11 Post-lecture readings will be shared with the cohort.

Course Name: Comparative Public Administration
Course Code: LS2106
Credit: 1
Course Instructors: Prof. Arpit Chaturvedi

Course Objective:
This 4 - part course gives the students a deep dive into a set theory-based qualitative methodology to understand public policy outcomes. This workshop begins by introducing students to comparative methods, with a focus on public administration and democratic governance. It explores different analytical approaches to comparative studies developed by Emile Durkheim and Max Weber. It delves into the weberian method of creating ideal types. The course offers a fundamental introduction to the issues around establishing causality in social sciences using the Mill's direct and indirect method of exploring causal relationships and the challenges in the quest of establishing causality in social sciences.

Further, the course is focused on exploring newer comparative techniques developed by Charles Ragin and familiarizes the students with the set theoretical logic of qualitative comparisons.

Students work on the FsQCA software and gain skills in conducting pathway analysis to determine the causal conditions that explain policy outcomes. This analysis augments and makes up for some of the methodological shortcomings of statistical analysis that most public policy professionals are exposed to
Students are finally given a project to conduct a comparative analysis to determine the factors that lead to effective public participation in governance using 3 real-life case studies covering 4 different national contexts. The course has no prerequisites.

Course Learning Outcomes:
● Ability to conduct comparative analysis in social sciences and public administration.
● Ability to understand the methodologies of Max Weber and Emile Durkheim in conducting comparative analysis.
● Ability to create ideal types by using deductive and inductive methods.
● Ability to use Mill's direct and indirect methods of causal reasoning.
● Ability to conduct pathways analysis for causal conditions on FsQCA software.

Course Content:
Lecture1: Introductions and Why the Comparative Method
• Collier, David. "The Comparative Method." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, 1993. https://papers.ssrn.com/abstract=1540884.
Lecture 2: Qualitative Comparisons and Using Ideal Types
• Swedberg, Richard. "How to Use Max Weber's Ideal Type in Sociological Analysis." Journal of Classical Sociology 18, no. 3 (August 1, 2018): 181–96. https://doi.org/10.1177/1468795X17743643.
• Lindbekk, Tore. "The Weberian Ideal-Type: Development and Continuities." Acta Sociologica 35, no. 4 (1992): 285–97.
Lecture 3: Causal Inferences and Pathways Analysis
• Ragin, Charles, and David Zaret. 1983. "Theory and Method in Comparative

Research: Two Strategies." Social Forces 61 (3): 731–54.

•Ragin, Charles C. The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies. University of California Press, 1987. Pp. 34-52 , 85-102

Lecture 4: Comparative Method Application: Public Participation in Governance (In class Presentations/Assessment and Discussion)

Specific instructions for the assignment:

1. Each team will have to read ALL of the THREE case studies attached.

2. They need to explain what are the "Pathways to Public Participation" based on these case studies.

3. In doing so, the need to create an excel sheet.

4. Each country is a row.

5. Each condition/variable is a column (1 = that variable exists in that country and 0 = it is absent in that country). Please identify conditions and whether each condition was present or absent in each country.

6. Public participation is the explanatory variable/factor (1 = public participation was successful in that country; 0 = public participation was not successful in the country). Please identify whether public participation was successful in each country or not.

7. Convert Excel Sheet to CSV Delimited Format.

8. Run the file on the FsQCA software

9. Show results.

10. Interpret results to explain what are the pathways for effective public participation

Reading Material:

• Collier, David. "The Comparative Method." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, 1993. https://papers.ssrn.com/abstract=1540884.

• Swedberg, Richard. "How to Use Max Weber's Ideal Type in Sociological Analysis." Journal of Classical Sociology 18, no. 3 (August 1, 2018): 181–96. https://doi.org/10.1177/1468795X17743643.

• Lindbekk, Tore. "The Weberian Ideal-Type: Development and Continuities." Acta Sociologica 35, no. 4 (1992): 285–97.

• Ragin, Charles, and David Zaret. 1983. "Theory and Method in Comparative Research: Two Strategies." Social Forces 61 (3): 731–54.

•Ragin, Charles C. The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies. University of California Press, 1987. Pp. 34-52 , 85-102.

• Baiocchi, Gianpolo. 2001. "Participation, Activism, and Politics: The Porto Alegre Experiment and Deliberative Democratic Theory." Politics and Society 3(1).

• Babajanian, Babken V. 2008. Social Capital and Community Participation in Post-Soviet Armenia: Implications for Policy and Practice. Europe-Asia Studies 60 (8): 1299 – 1319.

• Fleischman, Forrest, and Claudia Rodriguez Solorzano. "Institutional supply, public demand, and citizen capabilities to participate in environmental programs in Mexico and India" International Journal of the Commons , 2018, Vol. 12, No. 2 (2018), pp. 162-190.

Assessment Scheme:

Using the FsQCA Software on the variables/factors identified in the case studies, discuss the various viable pathways to public participation. The final assignment has 100% weightage which is further subdivided as follows:

S. No	Specifications	Weightage
01	Case Study (Ability to identify variables/factors from the cases)	30
02	Project work (Ability to generate truth table in the FsQCA software)	30
03	Data Analysis (Ability to conduct pathways analysis and interpret results)	40
	Total (100)	**100**