CENTRAL UNIVERSITY OF PUNJAB

Ph.D. Education

Batch 2025

Department of Education

GRADUATE ATTRIBUTES

The graduates will reflect research from multiple perspectives with creative and innovative thinking and apply it to practical and theoretical challenges they will face in life.

Programme Learning Outcomes

The programme focuses on;

- developing research skills on different advanced aspects of research methodology and application of digital technologies in the field of research and teaching

- analyzing the community related problems and conducting research for their solutions

- developing scientific attitude and global outlook

Course Structure of the Programme

Course Code	Course Title	Course Type	Credit Distribution			
			L	T	P	Total
EDU.712	Research Methodology	Core Course	4	0	0	4
EDU 713	Statistics and Computer Applications in Educational Research	Core Course	4	0	0	4
UNI.753	Curriculum, Pedagogy and Evaluation	Core Course	1	0	0	1
EDU.751	Research and Publication Ethics	Core Course	2	0	0	2
EDU.710	Extension Project	Skill Based	0	0	4	2
EDU.752	Teaching Assistantship	Skill Based	0	0	2	1
EDU.711	International Mentoring	Value added course	0	2	0	2
	Total		**11**	**2**	**6**	**16**

Course Title: Research Methodology

Course Code: EDU.712

**Course Learning Outcomes Total
Hours: 60**

L	T	P	Credits
4	0	0	4

After completion of the course the students will be able to;
CLO1: explore the different approaches to research
CLO2: develop skills in sampling process and construct tools
CLO3: develop competency in analyzing quantitative data
CLO4: develop skills in conduct of different types of qualitative research and its analysis procedure

Units/ Hours	Contents	Mapping with CLOs
Unit I 16 Hours	• Research Approaches: positivist and non-positivist • Process of conducting research: Identifying a Research Problem, Reviewing the Literature, Specifying a Purpose statement, objectives, hypothesis and research questions for Research, Collecting Data, Analyzing and Interpreting the Data, and Reporting and Evaluating Research • Types of Research: Historical, Descriptive, Experimental and Mixed Method **Learning Activities:** Group discussion on steps of conducting research and seminars on various types of research	**CLO1**
UNIT II 12 Hours	• Sampling design: Selecting appropriate probability and non-probability sampling techniques for qualitative and quantitative research problems • Quantitative and qualitative research tools: types and process of development (questionnaire, rating scales, attitude scales, inventories, interview and observation schedules, focus group discussion and field notes) **Learning Activities:** Individual scholar will develop sample tools of each types	**CLO2**
UNIT III 16 Hours	• Process of standardization of tools: Planning, preparation, try out and evaluation • Process of Analyzing and Interpreting Quantitative data: scoring the Data, determining the category of data, selecting appropriate statistical technique, data feeding, cleaning and account for Missing Data	**CLO3**

	Learning Activities: The scholars will be developing one Tool/ Test	
UNIT IV 16 Hours	• Qualitative research methods: case study research, ethnographic research, phenomenology, and grounded theory. • Qualitative data analysis: data reduction, data display and reaching conclusions. content analysis, thematic analysis • Process of validating the qualitative research findings: triangulation, member checking, and auditing. **Learning Activities:** Presentation and discussion of different qualitative research techniques through seminar	**CLO4**

Suggested Readings

- Adams, K. A., & Lawrence, E. K. (2015). *Research methods, statistics and applications.* Sage Publications.
- Agarwal, Y. P. (2004). Statistical Methods: Concepts, Application and Computation. New Delhi: Sterling Publishers.
- Aiken, L.R., &Marnat, G. G. (2009). *Psychological testing and assessment*. Noida (U.P.): Pearson.
- Anastasi, A., & Urbina, S. (2014). *Psychological testing*. New Delhi: PHI Learning Private Limited.
- Best J.W. (1999). *Research in Education*. New Delhi: Prentice Hall of India Pvt. Ltd.
- Best, J.W., & Kahn, J. W. (2006). *Research in education*. New Delhi: PHI Learning Private Ltd.
- Bogdon, R., &Biklen, S. K. (2008). *Qualitative Research for Education: An Introduction to Theories and Practice*. New Delhi: PHI learning
- Borg, W.R., & Gall, M.D. (1983). *Educational Research – An Introduction*. New York: Longman, Inc.
- Check, J., &Jurs, S. G. (2009). *Research methods in education*. Pearson Publications.
- Creswell, J. W. (2015). *Educational Research: Planning, Conducting and Evaluating Quantitative and qualitative Research*. Boston: Pearson Publications.
- Curtis, W., Murphy, M., &Shields, S. (2013). *Research and Education*. New York & London: Routledge
- EfratEfron, S., &Ravid, R. (2013). *Action Research in Education: A Practical Guide*, New York: Routledge

- Egbert, J., &Sanden, S. (2013). *Foundations of Education Research: Understanding Theoretical Components*. New York: Routledge.
- Fraenkel, J.R., &Wallen, N.E. (1996). *How to Design and Evaluate Research in Education*. New York: McGraw Hill.
- Gall, M. D., Gall, J. P., & Berg, W. R. (2007). *Educational research an introduction*. Pearson Publications.
- Gordon, P. (1996). *A Guide to Educational Research*. New York: Routledge
- Gregory, R. J. (2014). *Psychological testing: History, principles and applications*. New Delhi: Pearson.
- Gupta, S. (2010). *Research methodology and statistical techniques.* New Delhi: Deep & Deep Publications Pvt. Ltd.
- Kilkapatrick, D.L. (2005). *Evaluating training Programmes: The four Levels*. San Francisco: Brrett-Kochler.
- Koul, L. (1984). *Methodology of Educational Research*. New Delhi: Vikas Publications.
- Koul, L. (2009). *Methodology of educational research*. Noida: Vikas Publishing House Pvt. Ltd.
- Kress, T. (2013). *Using Critical Research for Educational and Social Change*. New York & London: Routledge.
- Lauren, B., Little, T. D., & Card, N. A. (2012). *Developmental Research Methods*. New York: The Guilford Press.
- Martella, R. C., Nelson, J. R., Morgan, R. L., &Martella,N. E. (2013). *Understanding and Interpreting Educational Research*, New York: Routledge Guilford Press
- Maykut, P., & Morehouse, R. (1994). *Beginning Qualitative Research- A Philosophic and Practical Guide*. London: The Falmer Press.
- Miller, S. A. (2007). *Developmental Research Methods.* New Delhi: Sage Publications.
- Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods*. C.A: Sage Publications.
- Reynolds, C. R., Livingston, R. B., &Willson, V. (2009). *Measurement and assessment in education.* New Delhi: PHI Learning Private Limited.

Course Title: Statistics and Computer Applications in Educational Research

L	T	P	Credits
4	0	0	4

Course Code: EDU.713

Course Learning Outcomes   **Total Hours: 60**

After completion of the course the students will be able to;

CLO1: Differentiate between the descriptive and inferential statistics

CLO2: Construct and standardize tools for qualitative or quantitative analysis

CLO3: Develop competence involving selection of appropriate data analysis techniques.

CLO4: Integrate ICT into Teaching Learning, administration and Evaluation.

CLO5: Develop proficiency in the use of statistical packages for analysis of data

Units/Hours	Contents	Mapping with CLOs
Unit I **16 Hours**	• Meaning and importance of statistics • Descriptive and inferential statistics • Nature and Types of data, Scales of Measurement • Measures of central tendency: meaning and uses • Measures of Dispersion: range, quartile deviation, standard deviation, percentile, skewness and kurtosis, correlation and its types. **Learning Activities:** Individual scholars will learn the formulas and do the computation part in manual mode.	**CLO1**
UNIT II **16 Hours**	• Testing of Hypothesis: Null hypothesis, one tailed and two tailed test, level of significance, degree of freedom, standard error, confidence interval, type-I error and type-II error. • Testing of Normality of distribution: K-S one sample test, Normal Probability Curve (NPC) and its applications in research. • Construction of a tool: understanding the construct and operationalization, preparing the item content, selection of item format, difficulty level, discriminating index, item analysis, and determination of its Reliability & validity **Learning Activities:** Individual scholars will be developing a data collection tool under the concerned supervisor**.**	**CLO2**

UNIT III 16 Hours	**Parametric statistics:** • t-test, ANOVA, ANCOVA; meaning, assumptions and applications. Linear Regression. **Non-parametric statistics:** • Use of Chi-square as a Test of 'Goodness of Fit, Mann Whitney U test **Qualitative Data Analysis:** • Data analysis in qualitative research: content analysis, inductive, phenomenological- analytical **Learning Activities:** The scholars will be doing systematic literature review of studies related to their topic	**CLO3**
UNIT IV 12 Hours	**Computer Applications in Research** • Using tools of ICT in classroom-Google Forms, Padlet, Prezi and Google classroom. • Creating a Blog and an e-portfolio. • Introduction to competing software packages for data analysis- Excel and SPSS. • Uses of Artificial Intelligence tools in education **Learning Activities:** The scholars will be doing secondary/ primary data analysis of Quantitative methods of research and present individually.	**CLO4** **CLO5**

Suggested Readings

- Adams, K. A., & Lawrence, E. K. (2015). *Research methods, statistics and applications.* Sage Publications.
- Agarwal, Y. P. (2004). Statistical Methods: Concepts, Application and Computation. New Delhi: Sterling Publishers.
- Aiken, L.R., &Marnat, G. G. (2009). *Psychological testing and assessment.* Noida (U.P.): Pearson.
- Anastasi, A., & Urbina, S. (2014). *Psychological testing.* New Delhi: PHI Learning Private Limited.
- Best J.W. (1999). *Research in Education.* New Delhi: Prentice Hall of India Pvt. Ltd.
- Best, J.W., & Kahn, J. W. (2006). *Research in education.* New Delhi: PHI Learning Private Ltd.
- Bogdon, R., &Biklen, S. K. (2008). *Qualitative Research for Education: An Introduction to Theories and Practice.* New Delhi: PHI learning

- Borg, W.R., & Gall, M.D. (1983). *Educational Research – An Introduction*. New York: Longman, Inc.
- Check, J., &Jurs, S. G. (2009). *Research methods in education*. Pearson Publications.
- Creswell, J. W. (2015). *Educational Research: Planning, Conducting and Evaluating Quantitative and qualitative Research*. Boston: Pearson Publications.
- Curtis, W., Murphy, M., &Shields, S. (2013). *Research and Education*. New York & London: Routledge
- EfratEfron, S., &Ravid, R. (2013). *Action Research in Education: A Practical Guide*, New York: Routledge
- Egbert, J., &Sanden, S. (2013). *Foundations of Education Research: Understanding Theoretical Components*. New York: Routledge.
- Fraenkel, J.R., &Wallen, N.E. (1996). *How to Design and Evaluate Research in Education*. New York: McGraw Hill.
- Gall, M. D., Gall, J. P., & Berg, W. R. (2007). *Educational research an introduction*. Pearson Publications.
- Gordon, P. (1996). *A Guide to Educational Research*. New York: Routledge
- Gregory, R. J. (2014). *Psychological testing: History, principles and applications*. New Delhi: Pearson.
- Gupta, S. (2010). *Research methodology and statistical techniques.* New Delhi: Deep & Deep Publications Pvt. Ltd.
- Kilkapatrick, D.L. (2005). *Evaluating training Programmes: The four Levels*. San Francisco: Brrett-Kochler.
- Koul, L. (1984). *Methodology of Educational Research*. New Delhi: Vikas Publications.
- Koul, L. (2009). *Methodology of educational research*. Noida: Vikas Publishing House Pvt. Ltd.
- Kress, T. (2013). *Using Critical Research for Educational and Social Change*. New York & London: Routledge.
- Lauren, B., Little, T. D., & Card, N. A. (2012). *Developmental Research Methods*. New York: The Guilford Press.
- Martella, R. C., Nelson, J. R., Morgan, R. L., &Martella,N. E. (2013). *Understanding and Interpreting Educational Research*, New York: Routledge Guilford Press
- Maykut, P., & Morehouse, R. (1994). *Beginning Qualitative Research- A Philosophic and Practical Guide*. London: The Falmer Press.
- Miller, S. A. (2007). *Developmental Research Methods.* New Delhi: Sage Publications.
- Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods*. C.A: Sage Publications.
- Reynolds, C. R., Livingston, R. B., &Willson, V. (2009). *Measurement and assessment in education.* New Delhi: PHI Learning Private Limited.
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Course Title: Curriculum, Pedagogy and Evaluation

Course Code: UNI.753

L	T	P	Credit
1	0	0	1

Course Learning Outcomes (CLO)   **Total Hours: 15**

After completion of the course, scholars shall be able to;
CLO1: Analyze the principles and bases of curriculum design and development
CLO2: Examine the processes involved in curriculum development
CLO3: Develop the skills of adopting innovative pedagogies and conducting students' assessment
CLO4: Develop Curriculum of a specific course/programme

Units/Hours	Contents	Mapping with CLOs
Unit I **4 Hours**	• Curriculum: Concept and Principles of Curriculum Development, Foundations of Curriculum Development. • Types of Curriculum Designs- Subject- centered, learner-centered, experience- centered, activity-centered and core curriculum. • Designing local, national, regional, and global-specific curriculum. • National Credit Framework and Higher Education **Learning Activities:** Group Discussion	**CLO1** **CLO4**
Unit II **4 Hours**	• Process of Curriculum Development: Formulation of graduate attributes, course/learning outcomes, content selection, organization of content and learning experiences, and transaction process. • Comparison among Interdisciplinary, multidisciplinary, and trans-disciplinary approaches to curriculum. **Learning Activities:** Preparation and submission of report on the discussed concepts	**CLO2** **CLO4**
Unit III **3 Hours**	• Conceptual understanding of Pedagogy. • Traditional Indian Pedagogies: Sravan, manana, Nidhidhyasana, Prashnottar Vidhi, Tark Vidhi, Vyakhya Vidhi, Adhyaropa Apavad Vidhi, Drishtant Vidhi, Katha – Kathan, and Upadesh Vidhi	**CLO3** **CLO4**

	• Innovative Pedagogies: Peeragogy, Cybergogy and Heutagogy with special emphasis on Blended learning, Flipped learning, Dialogue, cooperative and collaborative learning **Learning Activities:** Preparation and submission of report on the discussed concepts	
Unit IV 4 Hours	• Assessment: Concept, purpose, and principles of preparing objective and subjective questions. • Conducting Assessment: Modes of conducting assessment – offline and online; use of ICT in conducting assessments. • Evaluation: Formative and Summative assessments, Outcome-based assessment, and scoring criteria. **Learning Activities:** Discussion and dialogue on modes of conducting assessment	**CLO3** **CLO4**

Transaction Mode

Lecture, dialogue, peer group discussion, seminar

Evaluation criteria

There shall be an end-term evaluation of the course for 50 marks for a duration of 2 hours covering all the course learning outcomes (CLOs). The course coordinator shall conduct the evaluation.

Suggested Readings
- Allyn, B., Beane, J. A., Conrad, E. P., & Samuel J. A., (1986). *Curriculum Planning and Development*. Boston: Allyn & Bacon.
- Brady, L. (1995). *Curriculum Development*. Prentice Hall: Delhi. National Council of Educational Research and Training.
- Deng, Z. (2007). Knowing the subject matter of science curriculum, *Journal of Curriculum Studies*, 39(5), 503-535. https://doi.org/10.1080/00220270701305362
- Gronlund, N. E. & Linn, R. L. (2003). *Measurement and Assessment in teaching*. Singapore: Pearson Education
- McNeil, J. D. (1990). *Curriculum: A Comprehensive Introduction*, London: Scott, Foreman/Little
- Nehru, R. S. S. (2015). *Principles of Curriculum*. New Delhi: APH Publishing Corporation.

- Oliva, P. F. (2001). *Developing the curriculum* (Fifth Ed.). New York, NY: Longman
- Stein, J. and Graham, C. (2014). *Essentials for Blended Learning: A Standards-Based Guide*. New York, NY: Routledge.

Web Resources
- https://www.westernsydney.edu.au/___data/assets/pdf_file/0004/467095/Fundamentals_of_Blended_Learning.pdf
- https://www.uhd.edu/academics/university-college/centers-offices/teaching-learning-excellence/Pages/Principles-of-a-Flipped-Classroom.aspx
- http://leerwegdialoog.nl/wp-content/uploads/2018/06/180621-Article- The-Basic-Principles-of-Dialogue-by-Renate-van-der-Veen-and-Olga-Plokhooij.pdf

Course Title: RESEARCH AND PUBLICATION ETHICS

Course Code: EDU.751

L	T	P	Credit
2	0	0	2

Course Learning Outcomes (CLOs)   **Total Hours: 30**

After completion of the course the students will be able to;
CLO1: Demonstrate Intellectual honesty and research integrity
CLO2: Judge Publication ethics, authorship and contributor-ship
CLO3: Identify thrust areas of global research and Open access publications and initiatives
CLO4: Analyze Research Metrics

Unit/ Hours	Course content	CLOs
Unit I **3 Hours**	**Philosophy and Ethics** • Introduction to Philosophy: definition, nature and scope, content, branches • Ethics: definition, moral philosophy, nature of moral judgements and reactions	**CLO1**
Unit II **5 Hours**	**Scientific Conduct** • Ethics with respect to science and research • Intellectual honesty and research integrity	**CLO2**

	• Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP) • Redundant publications: duplicate and overlapping publications • Selective reporting and misrepresentation of data	
Unit III **7 Hours**	**Publication Ethics** • Publication ethics: definition, introduction, and importance • Best practices/ standards setting initiatives and guidelines: Committee on Publication Ethics (COPE). Salami Slicing • Conflicts of interest • Publication misconduct: definition, concept, problems that lead to unethical behaviour and vice versa, types • Violation of publication ethics, authorship and contributorship • Identification of publication misconduct, complaints and appeals • Predatory publishers and journals	**CLO2**
Unit IV **4 Hours**	**Open Access Publishing** • Open access publications and initiatives • SHERPA/ROMEO online resource to check publisher copyright & self-archiving policies • Software tool to identify predatory publications developed by SPPU • Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal.	**CLO3**
Unit V **4 Hours**	**Publication Misconduct** • Group Discussions: Subject specific ethical issues, FFP, authorship; conflicts of interest; complaints and appeals: examples and fraud from India and abroad • Software tools: Use of plagiarism software like Turnitin, Urkund and other open source software tools	**CLO1**
Unit VI **7 Hours**	**Databases and Research Metrics**	**CLO4**

	• Databases: Indexing databases; Citation database: Web of Science, Scopus etc. • Research Metrics: Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score; Metrics : h- index, i10 index	

Suggested Readings

- Best J.W. (1999). *Research in Education*. New Delhi: Prentice Hall of India Pvt. Ltd.
- Bogdon, R., &Biklen, S. K. (2008). *Qualitative Research for Education: An Introduction to Theories and Practice*. New Delhi: PHI learning
- Borg, W.R., & Gall, M.D. (1983). *Educational Research – An Introduction*. New York: Longman, Inc.
- Chandra, S. S., & Sharma, R.K. (2010). *Research in education*. New Delhi: Atlantic Publishers and Distributors (P) Ltd.
- Creswell, J. W. (2015). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*. Boston: Pearson Publications.
- Curtis, W., Murphy, M., N Shields, S. (2013). *Research and Education*. New York & London: Routledge
- Gordon, P. (1996). *A Guide to Educational Research*. New York: Routledge
- Kaul, L. (1984). *Methodology of Educational Research*. New Delhi: Vikas Publications.
- Kilkapatrick, D.L. (2005). *Evaluating training Programmes: The four Levels*. San Francisco: Brrett-Kochler.
- Kress, T. (2013). *Using Critical Research for Educational and Social Change*. New York & London: Routledge.
- Lauren, B., Little, T. D., & Card, N. A. (2012). *Developmental Research Methods*. New York: The Guilford Press.
- Martella, R. C., Nelson, J. R., Morgan, R. L., &Martella,N. E. (2013). *Understanding*
- Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods*. C.A: Sage Publications.
- Tolmie, A., McAteer, E., &Muijs, D. (2012). *Quantitative Methods in Educational and Social Research Using SPSS*. Maidenhead: Open University Press
- Wellington, J. (2015). *Educational Research*. New Delhi: Bloomsbury Academic.
- Weirsma. W., & Stephen G. (2009). *Research methods in Education*. New York: Pearson Education

Course Title: EXTENSION PROJECT

L	T	P	Credit
0	0	4	2

Course Code: EDU.710

The course aims at identifying local needs and issues involving research to solve problems for making a contribution to the local community.

Course Learning Outcomes

On successful completion of this course, students will be able to;

CLO 1: Establish a link between the community and profession
CLO 2: Identify community needs, issues and aspirations
CLO3: Analyse and suggest solutions to problems of community
CLO4: Make a contribution of their professional learning to the society
Course Content

- Identification of problem (within 4 weeks)
- Submission of research proposal (5th -8th week)
- Submission of research report (last week of semester)
- Presentation of work
- Submission of Paper for Publication

Evaluation Criteria

Content	Marks
Project proposal	20
Project work report	50
Submission of paper for publication	10
Viva Voce	20
Total	**100**

Course Title: TEACHING ASSISTANTSHIP

L	T	P	Credit
0	0	2	1

Course Code: EDU.752   **Total Hours: 30**
Course Learning Outcome

At the end of this skill development course, the scholars shall be able to;

CLO 1: familiarize themselves with the pedagogical practices of effective classroom delivery and knowledge evaluation system

CLO 2: manage large and small classes using appropriate pedagogical techniques for different types of content

Activities:

- The scholars shall attend Master degree classes of his/her supervisor to observe the various transaction modes that the supervisor follows in the classroom delivery or transaction process one period per week.

- The scholars shall be assigned one period per week under the direct supervision of his/her supervisor to teach the Master degree students adopting appropriate teaching strategy(s).

- The scholars shall be involved in the examination and evaluation system of the Master degree students such as preparation of questions, conduct of examination and preparation of results under the direction of the supervisor.

  Evaluation:

- At the end of the semester, the supervisor shall conduct an examination of teaching skills learned by the scholar as per the following **evaluation criteria**:

  - The scholars shall be given a topic relevant to the Master degree course of the current semester as his/her specialization to prepare lessons and deliver in the classroom before the master degree students for one hour (45 minutes teaching + 15 minutes' interaction).

  - The scholars shall be evaluated for a total of 50 marks comprising *content knowledge* (10 marks), *explanation and demonstration skills*(10 marks), *communication skills* (10 marks), *teaching techniques employed* (10 marks), and classroom interactions (10).

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Course Title: INTERNATIONAL MENTORING

L	T	P	Credits
0	2	0	2

Course Code: EDU.711   **Total 30 hours**

The course aims at providing international exposure on various areas, methods, and recent trends in educational research

Course Learning Outcomes

After completion of the course, the students will be able to
CLO1: Establish a link with the international learning community to develop
         global vision

CLO2: Identify thrust areas of global research

CLO3: Analyze and suggest solutions of global issues

Units/Hours	Contents	Mapping with CLOs
7 hours	• Virtual session/face-to-face with international experts/ students on various research areas	CLO 1, CLO 2, CLO 3
8 hours	• To explore thrust areas of global research and suggest innovative solutions to various global-level problems.	CLO 1, CLO 2, CLO 3

Evaluation criteria

E-assessment (Report writing) - 50 marks