# School of Pedagogical Sciences
## MAHATMA GANDHI UNIVERSITY

# Scheme & Syllabus of the MDC & VAC Courses offered for the 3rd & 4th Semester of 4+1 Integrated UG&PG Programme at Graduate School

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| **SEMESTER III** | | | | | | |
| | Major | 4 | | | Intermediate (200-299) | |
| | Major | 4 | | | " | |
| | Major | 4 | | | " | |
| | Minor A | 4 | | | " | |
| | MDC | 3 | | | " | |
| MG3MDCUPS201 | Curriculum Development: Theories and Application | 3 | 2 | 1 | 200-299 | MDC |
| MG3MDCUPS202 | Indian Values and Ethos | 3 | 2 | 1 | 200-299 | MDC |
| MG3MDCUPS203 | Planning and Management of Instruction | 3 | 2 | 1 | 200-299 | MDC |
| MG3MDCUPS204 | Web Technology in Education | 3 | 2 | 1 | 200-299 | MDC |
| | VAC | 3 | | | " | |
| MG3VACUPS205 | Teaching and Research Aptitude | 3 | 2 | 1 | 200-299 | VAC |
| MG3VACUPS206 | Assessment Techniques in OBE | 3 | 2 | 1 | 200-299 | VAC |
| **SEMESTER IV** | | | | | | |
| | Major | 4 | | | " | |
| | Major | 4 | | | " | |
| | Major | 4 | | | " | |
| | Minor B | 4 | | | " | |
| | SEC | 3 | | | " | |
| | VAC | 3 | | | " | |
| MG4VACUPS207 | Data Analysis and Interpretation in Research | 3 | 2 | 1 | 200-299 | VAC |
| MG4VACUPS208 | Vedic Mathematics | 3 | 2 | 1 | 200-299 | VAC |
| | Internship/Fieldwork | 2 | | | | |

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| | **MAHATMA GANDHI UNIVERSITY**<br>**Graduate School** |
| | **4 + 1 Integrated UG and PG Programme** |

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|---|---|---|---|
| **School** | School of Pedagogical Sciences | | |
| **Programme** | 4 + 1 Integrated UG and PG | | |
| **Course Title** | Curriculum Development: Theories and Application | | |
| **Course Designer** | Dr. Sibu G. Netto | | |
| **Course Type** | MDC | | |
| **Course Level** | 200-299 | | |
| **Course Code** | MG3MDCUPS201 | | |
| **Course Overview** | This course provides an in-depth exploration of the concept of curriculum, its determinants, foundational principles, and key areas, alongside the theoretical underpinnings of curriculum development. Learners will be able to critically analyse models, approaches, and challenges in curriculum development, evaluate factors influencing curriculum implementation, and assess various approaches to curriculum design. Additionally, the course equips participants with the skills necessary to evaluate curricula and curriculum materials. It also introduces the essentials, steps, and emerging trends in selecting materials and procedures for effective curriculum planning and organisation. | | |
| **Semester** | II | **Credit** | 3 |
| **Total Student Learning Time** | **Instructional hours for theory** | **Instructional hours for practical/fieldwork** | |
| | 30 | 30 | |
| **Pre-requisite** | This course is designed for students enrolled in the 2nd semester of an undergraduate programme. A foundational understanding of educational concepts and basic academic skills is recommended to engage fully with the curriculum content and learning outcomes. | | |

## COURSE OUTCOMES (CO)

| CO No. | Expected Course Outcome | Learning Domains | PSO No. |
|---|---|---|---|
| | *Upon completion of this course, students will be able to;* | | |
| 1 | Understand the concepts, foundations, and determinants of curriculum development. | *R, U* | |
| 2 | Explain different areas of the curriculum and related theoretical frameworks. | *R, U* | |
| 3 | Apply curriculum models and approaches in practical contexts. | *A, S* | |
| 4 | Analyse factors affecting curriculum implementation and development. | *An* | |
| 5 | Evaluate curriculum materials and approaches for effectiveness. | *E* | |
| 6 | Develop skills to plan, organise, and select materials for curriculum planning. | *C, S* | |

*(Learning Domains: Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S))

## COURSE CONTENT

| **Module 1 – Curriculum Development** | **Hours** | **CO No** |
|---|---|---|
| Curriculum – Definitions - General Principles - Characteristics of Curriculum Organisation.<br>Different aspects of curriculum organisation: Organising the courses - Organising the Materials within the course.<br>Elements of Curriculum Design: Objectives, Content, Learning Experiences, and Evaluation.<br>OBE Curriculum: Aligning Curriculum with Programme Outcomes. | 10 | 1, 2, 3 |
| **Module 2 - Implementation and Evaluation of Curriculum** | **Hours** | **CO No** |
| Factors in Curriculum Implementation: Role of students, teachers, and the instructional environment.<br>Curriculum Evaluation: Tools and Techniques, Formative and Summative Evaluation Techniques.<br>Utilising results for curriculum improvement.<br>Continuous Quality Improvement in Curriculum.<br>Addressing Gaps: Curriculum reform, periodic revisions, and addressing inequalities. | 10 | 4, 5, 6 |
| **Module 3 - Contemporary Issues in Curriculum Development** | **Hours** | **CO No** |
| Role of Technology in Curriculum Design.<br>Inclusive and Equitable Curricula.<br>Integration of Cross-disciplinary Themes.<br>Global Trends and Challenges. | 10 | |

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| **Mode of Transaction** | **Tutorials**:<br>*Concept Mapping*: Students create visual maps connecting curriculum elements like objectives, content, and evaluation.<br>*Role-Playing*: Simulate the roles of teachers, students, and administrators to explore factors in curriculum implementation.<br>*Tool Analysis*: Evaluate existing formative and summative assessment tools for effectiveness and relevance.<br>*Reflection Sessions*: Discuss challenges in implementing inclusive curricula and brainstorm solutions.<br>*Debates*: Conduct debates on integrating cross-disciplinary themes and addressing global educational trends.<br>**Practical: (30 Hours)**<br>*Design a Curriculum*: Small groups draft a mini-curriculum for a specific subject, focusing on objectives, content, learning experiences, and evaluation.<br>*OBE Mapping Exercise*: Create an alignment table mapping learning objectives to program and course outcomes.<br>*Curriculum Gap Analysis*: Perform a gap analysis for a sample curriculum and suggest improvements.<br>*Technology Integration Task*: Design a digital component for a curriculum using tools like AR/VR or AI-driven platforms. |
| **Mode of Assessment** | Assignment, Seminar, Internal Examination |

**Learning Resources**

**Core Texts**

Ornstein, A. C., & Hunkins, F. P. (2018). *Curriculum: Foundations, principles, and issues* (7th ed.). Pearson.
Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university: What the student does* (4th ed.). Open University Press

**Supplementary Readings**

Resnick, L. B., & Klopfer, L. E. (1989). Toward the thinking curriculum: Current cognitive research. In 1989 Yearbook of the Association for Supervision and Curriculum Development (pp.1-18), Alexandria, VA: Association for Supervision and Curriculum Development.
Schlechty, P. C. (1990). Schools for the Twenty-first Century: leadership Imperatives for Educational Reform. San Francisco: Josey-Bass.

**Online Resources**

UNESCO International Bureau of Education (IBE). (n.d.). *Curriculum development and implementation.* Retrieved from https://www.ibe.unesco.org/
Open Educational Resources (OER) Commons. (n.d.). *Curriculum design and evaluation resources.* Retrieved from https://www.oercommons.org/

| **Relevance of Learning the Course/ Employability of the Course** |
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| This course on curriculum development equips students with the theoretical knowledge and practical skills essential for designing, implementing, and evaluating effective curricula in diverse educational settings. By addressing foundational principles, contemporary issues, and innovative practices such as Outcome-Based Education (OBE) and technology integration, the course prepares learners to navigate and contribute to dynamic educational environments. Its emphasis on inclusivity, cross-disciplinary themes, and global trends enhances participants' ability to adapt to emerging challenges. Graduates of this course can pursue careers as curriculum designers, instructional coordinators, educational consultants, and policy advisors or advance as educators and administrators with a solid foundation in curriculum innovation and reform. Including practical components like curriculum gap analysis and technology integration further boosts employability, enabling participants to meet the demands of 21st-century educational institutions. |

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| | **MAHATMA GANDHI UNIVERSITY**<br>**Graduate School** |
| | **4 + 1 Integrated UG and PG Programme** |

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|---|---|---|---|
| **School** | School of Pedagogical Sciences | | |
| **Programme** | 4 + 1 Integrated UG and PG Programme | | |
| **Course Title** | **Indian Values and Ethos** | | |
| **Course Designer** | **Dr Smitha S** | | |
| **Course Type** | MDC (Multidisciplinary Course) | | |
| **Course Level** | 200-299 | | |
| **Course Code** | MG3MDCUPS202 | | |
| **Course Overview** | This course on **Indian Values and Ethos** provides students with a comprehensive understanding of Indian values and ethos, emphasizing their relevance in contemporary life. It explores philosophical, cultural, and ethical dimensions of Indian traditions, aiming to instill a sense of moral responsibility, respect for diversity, and commitment to social harmony. | | |
| **Semester** | Third Semester | **Credit** | 3 |
| **Total Student Learning Time** | **Instructional hours for theory** | **Instructional hours for practical/lab work/fieldwork** | |
| | 45 hours | 30 hours | |
| **Pre-requisite** | • Familiarity with basic concepts of ethics and morality.<br>• Interest in Indian culture and philosophy. | | |

**COURSE OUTCOMES (CO)**

| CO No. | Expected Course Outcome | Learning Domains | PSO No. |
|---|---|---|---|
| | *Upon completion of this course, students will be able to;* | | |
| 1 | Understand the core principles of Indian values and ethos. | Cognitive | |
| 2 | Analyze the philosophical underpinnings of Indian ethical systems. | Cognitive | |
| 3 | Reflect on the relevance of Indian values in contemporary personal and social contexts. | Affective | |
| 4 | Apply Indian values in addressing ethical dilemmas and fostering social harmony. | Cognitive, Affective | |
| 5 | Demonstrate respect for diversity and inclusiveness through understanding Indian traditions. | Affective, Psychomotor | |

| | | | |
|---|---|---|---|
| 6 | Develop a holistic perspective on life by integrating Indian cultural and ethical insights. | Affective, Psychomotor | |

**COURSE CONTENT**

| **Module 1**: **Foundations of Indian Values and Ethos** | 20 Hours **(T)+** 10 Hours **(P)** |
|---|---|
| • Introduction to Indian Values and Ethos: Concept, significance, and evolution of values in Indian culture.<br>• Core Indian Values: Truth (Satya), Non-violence (Ahimsa), Righteousness (Dharma), Self-discipline (Tapas).<br>• Philosophical Foundations: Teachings from Vedas, Upanishads, Bhagavad Gita, and other classical texts.<br>• Relevance in Modern Times: Indian values in personal ethics, social harmony, and global contexts. | |
| **Module 2: Ethical Systems and Applications** | 15 Hours **(T)**+ 10 Hours **(P)** |
| • Indian Ethical Systems: Vedic ethics, Buddhist principles of compassion, Jain concepts of non-possession.<br>• Role of Indian Epics: Ethical lessons from Ramayana and Mahabharata.<br>• Leadership and Values: Insights from Chanakya's Arthashastra and Gandhi's principles of non-violence.<br>• Ethical Applications: Case studies on applying Indian values in personal, professional, and societal decision-making. | |
| **Module 3: Contemporary Challenges and Indian Ethos** | 10 Hours **(T)**+ 10 Hours **(P)** |
| • Addressing Modern Issues: Relevance of Indian values in environmental ethics, gender equality, and communal harmony.<br>• Indian Constitution and Ethos: Integration of values in fundamental rights and duties.<br>• Global Perspectives: Contributions of Indian ethos to a multicultural and globalized world.<br>• Challenges and Way Forward: Cultural erosion, modernization, and fostering a value-based society. | |

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| **Mode of Transaction** | • **Classroom activities:**<br>➢ Discussion Circles/Personal Identity and Self- Understanding Sessions<br>➢ Role-Playing Scenarios/Case Study Analysis<br>➢ Peer Counselling Sessions<br>• **Field activities/Practical:**<br>➢ Community Engagement Projects/<br>➢ Workshops on Coping with Life Transitions/<br>➢ Case studies and real-world applications.<br>• **Lab-based activities:**<br>➢ Philosophical debates, Role-playing, simulations, and presentations. |
| **Mode of Assessment** | • Portfolio Development<br>• Presentations/Seminar/Assignment<br>• Quizzes/MCQ<br>• Final exam |

**Learning Resources**


- Radhakrishnan, S. (2019). *Indian Philosophy* (Volumes 1 & 2). Oxford University Press.
- Gandhi, M. K. (2009). *The Story of My Experiments with Truth*. Navajivan Publishing.
- Vivekananda, S. (2011). *The Complete Works of Swami Vivekananda* (Volumes 1-8). Advaita Ashrama.
- Chatterjee, S., & Datta, D. M. (2016). *An Introduction to Indian Philosophy*. University of Calcutta.
- Sharma, R. N., & Sharma, R. K. (2016). *Indian Society and Culture*. Atlantic Publishers.


| **Relevance of Learning the Course/ Employability of the Course** |
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| This course on **Indian Values and Ethos** equips students with a deep understanding of Indian cultural and ethical values, fostering moral clarity and inclusiveness. By integrating these values into decision-making, students enhance their employability in sectors like education, social work, governance, and cultural diplomacy. |

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| | **4 + 1 Integrated UG and PG Programme** |

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|---|---|---|---|
| **School** | School of Pedagogical Sciences | | |
| **Programme** | 4 + 1 Integrated UG and PG Programme | | |
| **Course Title** | Planning and Management of Instruction | | |
| **Course Designer** | Dr. Ismail Thamarasseri | | |
| **Course Type** | MDC (Multidisciplinary Course) | | |
| **Course Level** | 200-299 | | |
| **Course Code** | MG3MDCUPS203 | | |
| **Course Overview** | This course provides students with the foundational knowledge and skills required for effective planning and management of instructional processes. It covers instructional design, strategies, classroom management, and evaluation techniques, ensuring alignment with diverse learner needs and educational objectives. | | |
| **Semester** | 1 | **Credit** | 3 |
| **Total Student Learning Time** | **Instructional hours for theory** | **Instructional hours for practical/lab work/fieldwork** | |
| | 30 hours | 30 hours | |
| **Pre-requisite** | • Basic understanding of pedagogical principles.<br>• Familiarity with curriculum development and educational psychology. | | |

## COURSE OUTCOMES (CO)

| CO No. | Expected Course Outcome<br>*Upon completion of this course, students will be able to;* | Learning Domains | PSO No. |
|---|---|---|---|
| 1 | Explain the principles and components of effective instruction | U | 1,3 |
| 2 | Design instructional plans tailored to diverse learning contexts | C | 2,4 |
| 3 | Implement evidence-based teaching strategies | A | 1,4 |
| 4 | Evaluate instructional effectiveness using assessment tools | E | 3,5 |
| 5 | Address challenges in instructional planning and management | An | 1,3,6 |

*(Learning Domains: Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S))

**COURSE CONTENT**

| **Module 1:** Fundamentals of Instructional Planning | 15 Hours |
|---|---|
| • Meaning and Scope of Instructional Planning<br>• Importance of Setting Learning Objectives<br>• Models of Instructional Design: ADDIE and Backward Design<br>• Alignment of Curriculum, Instruction, and Assessment | |
| **Module 2:** Strategies and Approaches to Instruction | 15 Hours |
| • Direct, Indirect, and Interactive Teaching Methods<br>• Differentiated Instruction and Universal Design for Learning (UDL)<br>• Integrating Technology in Instruction<br>• Classroom Management Techniques: Engaging Diverse Learners | |
| **Module 3:** Assessment and Management in Instruction | 15 Hours |
| • Formative and Summative Assessments<br>• Rubrics and Performance-Based Assessments<br>• Instructional Leadership and Collaboration<br>• Managing Instructional Resources: Time, Space, and Materials | |

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| **Mode of Transaction** | • Classroom Activities: Lectures, case studies, group discussions.<br>• Field Activities/Practical: Practicum, real-world instructional planning,<br>• Lab-Based Activities: Lesson plan creation, digital resource utilization. |
| **Mode of Assessment** | • Quizzes<br>• Presentations<br>• Peer-reviewed projects<br>• Final exam |
| **Practical** | • Students create a detailed lesson plan using the ADDIE Model for a specific subject/topic. |

**Learning Resources**

1. Brookhart, S. M. (2013). *How to Create and Use Rubrics for Formative Assessment and Grading.* ASCD.
2. CAST (2018). *Universal Design for Learning Guidelines (Version 2.2).* CAST.
3. Danielson, C. (2007). *Enhancing Professional Practice: A Framework for Teaching.* ASCD.
4. Dick, W., Carey, L., & Carey, J. O. (2014). *The Systematic Design of Instruction* (8th ed.). Pearson.
5. Gagne, R. M. (1985). The Conditions of Learning and Theory of Instruction.
6. Gagné, R. M., Wager, W. W., Golas, K. C., & Keller, J. M. (2004). *Principles of Instructional Design* (5th ed.). Cengage Learning.
7. Hattie, J., & Timperley, H. (2007). *The Power of Feedback. Review of Educational Research, 77*(1), 81-112.
8. Marzano, R. J. (2003). Classroom Management That Works.
9. Marzano, R. J. (2007). *The Art and Science of Teaching: A Comprehensive Framework for Effective Instruction.* ASCD.
10. Ornstein, A. C., & Hunkins, F. P. (2018). Curriculum: Foundations, Principles, and Issues.
11. Reiser, R. A., & Dempsey, J. V. (2017). *Trends and Issues in Instructional Design and Technology* (4th ed.). Pearson.
12. Slavin, R. E. (2020). *Educational Psychology: Theory and Practice* (13th ed.). Pearson.
13. Stiggins, R. J. (2017). *Introduction to Student-Involved Assessment for Learning* (7th ed.). Pearson.
14. Thamarasseri, I. & Parey, M.A. (2014). *Instructional Technology*. New Delhi: APH Publishing Corporation
15. Tomlinson, C. A. (2017). *How to Differentiate Instruction in Academically Diverse Classrooms* (3rd ed.). ASCD.
16. Wiggins, G., & McTighe, J. (2005). *Understanding by Design* (Expanded 2nd ed.). ASCD.

| **Relevance of Learning the Course/ Employability of the Course** |
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| The course equips students to plan, manage, and evaluate instructional processes effectively. These skills enhance their career prospects in teaching, instructional coordination, and curriculum development across various educational institutions. |

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| | **MAHATMA GANDHI UNIVERSITY**<br>**Graduate School** |
| | **4 + 1 Integrated UG and PG Programme** |

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|---|---|---|---|
| **School** | School of Pedagogical Sciences | | |
| **Programme** | 4 + 1 Integrated UG and PG Programme | | |
| **Course Title** | Web Technology in Education | | |
| **Course Designer** | Dr. Ismail Thamarasseri | | |
| **Course Type** | MDC (Multidisciplinary Course) | | |
| **Course Level** | 200-299 | | |
| **Course Code** | MG3MDCUPS204 | | |
| **Course Overview** | This course explores the role of web technology in transforming education. It equips students with skills to leverage web-based tools for instructional design, collaborative learning, and online content delivery. Students will gain hands-on experience with web applications, fostering digital literacy and innovative teaching practices. | | |
| **Semester** | 1 | **Credit** | 3 |
| **Total Student Learning Time** | **Instructional hours for theory** | **Instructional hours for practical/lab work/fieldwork** | |
| | 30 hours | 30 hours | |
| **Pre-requisite** | • Basic proficiency in internet use and common web applications<br>• Familiarity with basic pedagogical concepts | | |

**COURSE OUTCOMES (CO)**

| CO No. | Expected Course Outcome<br>*Upon completion of this course, students will be able to;* | Learning Domains | PSO No. |
|---|---|---|---|
| 1 | *Explain the significance of web technology in education* | U | 1,3 |
| 2 | Apply web-based tools for teaching and learning | A | 2,4 |
| 3 | Design and develop web-based educational content | C | 2,5 |
| 4 | Analyse the effectiveness of web applications in education | An | 3,6 |
| 5 | Address challenges related to web-based teaching and learning | E | 4,5 |

*[Learning Domains: Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S)]

**COURSE CONTENT**

| **Module 1:** Introduction to Web Technology in Education | 15 Hours |
|---|---|
| • Overview of web technology: Evolution and significance in education<br>• Key concepts: Web 2.0, Web 3.0, and their impact on learning<br>• Theoretical perspectives: Connectivism and online learning theories<br>• Ethical considerations in web-based education | |
| **Module 2:** Web-Based Tools and Applications | 15 Hours |
| • Learning Management Systems (LMS) and their features<br>• Collaborative tools: Google Workspace, Microsoft Teams, and others<br>• Content creation tools: Blogs, wikis, and interactive platforms<br>• Accessibility and inclusion in web-based education | |
| **Module 3:** Designing and Implementing Web-Based Learning | 15 Hours |
| • Principles of effective web-based content design<br>• Developing multimedia-rich online lessons<br>• Assessment using web-based tools<br>• Overcoming challenges: Digital divide, cybersecurity, and learner engagement | |

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| **Mode of Transaction** | • Classroom Activities: Lectures, case discussions, tool demonstrations<br>• Field Activities: Case studies of successful web-based learning implementations<br>• Lab-Based Activities: Workshops on web tool utilization and content creation |
| **Mode of Assessment** | • Quizzes<br>• Tool evaluation reports<br>• Web content creation projects<br>• Peer-reviewed presentations<br>• Final exam |
| **Practical (any one)** | • Students create an interactive timeline (using Canva) showcasing the evolution from Web 1.0 to Web 3.0 and their educational impacts.<br>• Analyze real-world cases of plagiarism, data privacy breaches, or misinformation in online learning and present solutions. |

**Learning Resources**

1. Anderson, T. (Ed.). (2008). *The Theory and Practice of Online Learning* (2nd ed.). Athabasca University Press.

2. Bates, A. W. (2019). *Teaching in a Digital Age: Guidelines for Designing Teaching and Learning* (2nd ed.). Tony Bates Associates Ltd. (Available Online)
3. Bates, A.W. (2015). *Teaching in a Digital Age.* Open Textbook.
4. Dabbagh, N., Marra, R. M., & Howland, J. L. (2018). *Meaningful Online Learning: Integrating Strategies, Activities, and Learning Technologies for Effective Instruction.* Routledge.
5. Horton, W. (2011). *E-Learning by Design* (2nd ed.). Wiley.
6. Koehler, M. J., & Mishra, P. (2009). *What is Technological Pedagogical Content Knowledge (TPACK)?* Contemporary Issues in Technology and Teacher Education, *9*(1), 60-70.
7. Salmon, G. (2013). *E-Moderating: The Key to Online Teaching and Learning* (3rd ed.). Routledge.
8. Selwyn, N. (2011). *Education and Technology: Key Issues and Debates.* Bloomsbury Academic.
9. Selwyn, N. (2016). *Education and Technology: Key Issues and Debates.* Bloomsbury.
10. Siemens, G. (2005). *Connectivism: A Learning Theory for the Digital Age.* International Journal of Instructional Technology and Distance Learning.
11. Thamarasseri, I. & Parey, M.A. (2014). *Instructional Technology*. New Delhi: APH Publishing Corporation
12. Thamarasseri, I. (2018). *Technology & Innovations in Education*. New Delhi: Wisdom Press
13. Thamarasseri, I. (2024). *Educational Technology and Digital Learning*. GenNext Publication, Gyan Books (P) Ltd. New Delhi, ISBN: 9789356634022, https://shorturl.at/KpMJh

**Relevance of Learning the Course/ Employability of the Course**

This course prepares students for roles in education, training, and instructional design by equipping them with expertise in web-based teaching methods. They will be well-positioned to contribute to modern educational settings, ensuring effective digital pedagogy and fostering lifelong learning.

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| | **4 + 1 Integrated UG and PG Programme** |

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|---|---|---|---|
| **School** | School of Pedagogical Sciences | | |
| **Programme** | 4 + 1 Integrated UG and PG Programme | | |
| **Course Title** | Teaching and Research Aptitude | | |
| **Course Designer** | Dr. Muhammed K. V. | | |
| **Course Type** | VAC (Value Added Course) | | |
| **Course Level** | 200-299 | | |
| **Course Code** | MG3VACUPS205 | | |
| **Course Overview** | This course is designed to provide undergraduate students with a comprehensive understanding of key concepts in teaching, curriculum transaction, and educational evaluation. It covers essential topics such as instructional aims and objectives, methods of curriculum transaction, and various techniques of educational evaluation. Students will explore the elements and functions of instructional planning, including using learning domains and formulating clear, measurable objectives. They will also gain insights into teaching methods, evaluation tools, and grading systems. By integrating theory and practical applications, this course aims to equip students with the skills needed to enhance their learning effectiveness and teaching aptitude, preparing them for future academic and professional success. | | |
| **Semester** | 3 | **Credit** | 3 |
| **Total Student Learning Time** | **Instructional hours for theory** | **Instructional hours for practical work** | |
| | 45 hours | 30 hours | |
| **Pre-requisite** | • Students should understand basic educational concepts like teaching, learning, and curriculum.<br>• Good communication skills and the ability to think critically and analyse information.<br>• Familiarity with basic technology and classroom practices.<br>• Interest in the process of teaching and learning | | |

**COURSE OUTCOMES (CO)**

| CO No. | Expected Course Outcome | Learning Domains | PSO No. |
|---|---|---|---|
| | *Upon completion of this course, students will be able to;* | | |
| 1 | Understand the differences between aims, goals, objectives, measurement, assessment, and evaluation. | U, A | |
| 2 | Analyse instructional objectives for cognitive, affective, and psychomotor domains. | U, A, An, | |
| 3 | Create academic plans and use appropriate teaching methods. | A, An, C, S | |
| 4 | Adopt appropriate tools and techniques to evaluate learning outcomes | A, An, C, S | |
| 5 | Understand and use grading systems in educational evaluation. | U, A, An | |

*(Learning Domains: Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S)

**COURSE CONTENT**

| **Module 1: Instructional Aims and Objectives** | **Hours** |
|---|---|
| • Introduction to Instructional Aims and Objectives: Definition and differences between aims, goals, and objectives, Importance of setting clear instructional aims and objectives, Role of aims and objectives in curriculum development and lesson planning.<br>• Domains of Learning: Cognitive Domain, Affective Domain, Psychomotor Domain, Specifications, Use of Action verbs.<br>• Characteristics of Well-Written Objectives: Alignment with curriculum standards and learning outcomes.<br>• Academic Planning: Year Plan, Monthly Plan, Unit Plan, Semester Plan – Elements and Functions. | T: 15<br>P: 10 |
| **Module 2: Curriculum Transaction** | **Hours** |
| • Forms of Curriculum Transaction: Teaching, Instruction, Training, Coaching, Tutoring<br>• Phases of Teaching: Pre-active phase, interactive phase, post-active phase<br>• Methods of Teaching<br>• Teaching Skills: Core Teaching Skills, Basics of Micro Teaching, Team Teaching | T: 15<br>P: 10 |
| **Module 3: Educational Evaluation** | **Hours** |
| • Introduction to Educational Evaluation: The concept of measurement, assessment, and evaluation, Functions of educational evaluation<br>• Types of Educational Evaluation: Formative, Summative evaluation, Criterion-referenced, Norm-referenced evaluation, Ipsative Evaluation, Internal evaluation, External evaluation, Continues and comprehensive evaluation<br>• Tools and Techniques of Evaluation: Qualitative Tools (Observation, interviews, Sociometry and portfolios), Quantitative Tools: Tests, Check list, rating scales). | T: 15<br>P: 10 |

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| • Characteristics of a good evaluation tool: Objectivity, Objective based, Validity, Reliability, Comprehensiveness, Discriminating power, Practicality, Utility.<br>• Technology-based evaluation: Online quizzes, Application for online tests<br>• Grading System of evaluation: Definition, Meaning, Types of grading, Functions of grading, Merits and demerits of grading system of evaluation | |

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| **Mode of Transaction** | **Classroom activities:** Lectures, Discussions, Debates, Demonstration, Group Activities and Collaborative Learning<br>**Technology Integration**: Digital platforms (e.g., online quizzes and e-learning platforms) will be incorporated for assessments and additional learning resources. |
| **Mode of Assessment** | • Exams and Quizzes<br>• Written Assignments<br>• Group Projects & Presentations<br>• Participation and Engagement<br>• Online tests |
| **Practical (any one)** | • Formulate instructional aims and objectives aligned with blooms taxonomy from their subject<br>• Develop a micro lesson in any topic of learner's interest<br>• Design institutional planning / year plan / monthly plan / unit plan |

**Learning Resources**


1. Instructional Design: A Primer by R. M. Gagné, W. Wager, K. Golas, J. Keller: Pearson Education
2. Writing Measurable Learning Objectives by William L. M.: Corwin Press
3. Curriculum Development: A Guide to Practice by Jon W. Wiles & Joseph Bondi: Pearson
4. The Art and Science of Teaching by Robert J. Marzano: Marzano Research
5. Teaching Methods: A Guide for Teachers by R. C. Sharma: Lotus Press
6. Microteaching: A Critical Approach by D. S. Yadav: Deep & Deep Publications
7. Classroom Assessment: Principles and Practice for Effective Standards-Based Instruction by W. James Popham: Pearson
8. Educational Measurement and Evaluation by S. K. Mangal: Sterling Publishers
9. Assessment for Learning: An Action Guide for School Leaders by Nancy Frey, Doug Fisher, Steven L. Quattrochi: ASCD
10. Principles of Educational and Psychological Testing by Stanley J. Segal: McGraw-Hill Education
11. Assessment and Evaluation in Education and Psychology by S. K. Mangal: Prentice Hall of India
12. Instructional Strategies: A Practical Guide for Effective Teaching by M. H. Eggen & D. Kauchak: Pearson

| **Relevance of Learning the Course/ Employability of the Course** |
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| The Teaching Aptitude course is highly relevant for students pursuing careers in education and training. It equips students with skills in instructional planning, curriculum transaction, and educational evaluation, essential for teaching positions in schools, colleges, and other educational organisations. The course also enhances employability in corporate training, professional development, and educational consultancy. By fostering critical thinking, curriculum development, and the use of educational technology, the course prepares students for diverse roles in the education sector and industries requiring expertise in learning and development. Overall, it provides a solid foundation for those looking to enter teaching or any field that values effective learning strategies and evaluation. |

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| | **MAHATMA GANDHI UNIVERSITY**<br>**Graduate School** |
| | **4 + 1 Integrated UG and PG Programme** |

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|---|---|---|---|
| **School** | School of Pedagogical Sciences | | |
| **Programme** | 4 + 1 Integrated UG and PG | | |
| **Course Title** | ASSESSMENT TECHNIQUES IN OBE | | |
| **Course Designer** | Prof. (Dr.) Sajna Jaleel | | |
| **Course Type** | VAC | | |
| **Course Level** | 200-299 | | |
| **Course Code** | MG3VACUPS206 | | |
| **Course Overview** | This course, "Assessment Techniques in Outcome-Based Education (OBE)," is designed to equip teacher training students with the essential knowledge and skills required to effectively assess student learning outcomes within an OBE framework. The course covers a comprehensive range of topics, including the principles and philosophy of OBE, the alignment of assessment with learning outcomes, and the development of valid and reliable assessment tools. Students will explore various assessment methods such as traditional quizzes and exams, performance-based assessments like projects and portfolios, and authentic assessments involving real-world tasks and simulations. The course also delves into the use of technology in assessment, data analysis and interpretation, and continuous improvement in assessment practices. Ethical and legal considerations in assessment, including fairness, equity, and academic integrity, are thoroughly examined. Through a combination of theoretical knowledge and practical workshops, students will develop the ability to design and implement effective assessment techniques, analyse assessment data to inform teaching and learning, and foster a reflective and continuous improvement mindset in their assessment practices. This course aims to prepare future educators to enhance student performance and learning outcomes in an OBE context, ultimately contributing to the overall quality of education. | | |
| **Semester** | II | **Credit** | 3 |
| **Total Student Learning Time** | **Instructional hours for theory** | **Instructional hours for practical/fieldwork** | |
| | 30 | 30 | |
| **Pre-requisite** | ✓ A foundational understanding of educational principles and teaching methodologies.<br>✓ Familiarity with basic assessment concepts and tools.<br>✓ A willingness to engage in reflective practice and continuous improvement. | | |

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| | ✓ Proficiency in using technology for educational purposes. |

**COURSE OUTCOMES (CO)**

| CO No. | Expected Course Outcome | Learning Domains | PSO No. |
|---|---|---|---|
| | *Upon completion of this course, students will be able to;* | | |
| 1 | Explain the principles and philosophy of Outcome-Based Education (OBE) and its key components. | E | PO 1 |
| 2 | Design and implement various assessment techniques that align with learning outcomes. | C | PO 3, PO5 |
| 3 | Utilize a variety of assessment tools and strategies, including traditional, performance-based, and authentic assessments. | Ap | PO 2 |
| 4 | An Analyse and interpret both quantitative and qualitative assessment data to inform teaching practices. | An | PO 4, PO5 |
| 5 | Adopt a reflective and continuous improvement mindset in assessment practices. | C | PO 6, PO5 |
| 6 | Apply ethical principles and legal requirements to ensure fairness, equity, and academic integrity in assessments. | Ap | PO7, PO5 |

*(Learning Domains: Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S))

**COURSE CONTENT**

| | | |
|---|---|---|
| **Module 1: Introduction to Outcome-Based Education (OBE)**<br>• Definition and Principles of OBE<br>• Historical Background and Evolution of OBE<br>• Benefits of Implementing OBE<br>• Challenges of Implementing OBE<br>• Key Components of OBE: (Program Outcomes (POs), Course Outcomes (COs), Program Specific Outcomes (PSOs))<br>• Case Studies of Successful OBE Implementation | **5** | **CO 1** |
| Practical: Analysing the OBE framework of a selected institution | **5** | |
| | **5** | **CO2** |
| Practical: Create a detailed assessment rubric for a specific performance-based task. Present your rubric to the class, explaining the criteria and how you ensure validity and reliability. | **5** | |
| **Module 2: Designing and Implementing Assessment Techniques in OBE**<br>• Aligning Assessment with Learning Outcomes<br>• Types of Assessment: Formative, Summative, Diagnostic<br>• Developing Assessment Rubrics<br>• Performance-Based and Authentic Assessment | **5** | **CO 3** |

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| • Constructing Valid and Reliable Assessment Tools<br>• Bloom's Taxonomy and Instructional Objectives<br>• Assessment Tools: Observation, Checklists, Tests<br>• Major Issues in Assessment<br>• Use of Technology in Assessment | | |
| Practical: Collect and demonstrate online assessment tools | **5** | |
| **Module 5: Continuous Improvement in Assessment Practices**<br><br>• Reflective Practice and Self-Evaluation<br>• Feedback Mechanisms for Students and Teachers<br>• Strategies for Continuous Improvement in Assessment<br>• Case Studies and Best Practices in OBE Assessment | **5** | **CO 5** |
| Practical: Create a comprehensive assessment plan for a course or program, aligning assessments with learning outcomes. Present your plan to the class and receive feedback from peers and instructors. | **5** | |

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| **Mode of Transaction** | **Direct Instructions**: Brain storming lecture, Explicit presentations, E-Learning<br>**Online Instruction Through Google meet**<br>**Interactive Instructions**: Active co-operative learning, Group practice, Individual practices, Workshops, peer coaching….<br>**Presentations**: Expert/teacher, individual student, group representative |
| **Mode of Assessment** | **Mode of Assessment**<br>Continuous Internal Assessment (CIA)<br>a) Assignment<br>b) Seminar<br>c) Test<br>End Semester Examination |

**Learning Resources**


1. Biggs, J., & Tang, C. (2011). Teaching for Quality Learning at University. McGraw-Hill Education.
2. Anderson, L. W., & Krathwohl, D. R. (2001). A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Longman.
3. Acharya, C. Outcome-based education (OBE): A new paradigm for learning. Centre for Development of Teaching and Learning (Singapore), 2003.
4. Anderson, L. W., and Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing, Abridged Edition. Boston, MA: Allyn and Bacon.
5. Bloom B. Learning for mastery. Eval Com 1(2): 1968.
6. Bloom, B. S. (1956). Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain. New York: David McKay Co Inc.
7. Bouslama, F., Lansari, A., Al-Rawi, & A., Abonamah, A.A. A novel outcome based educational model and its effect on student learning, curriculum development, and assessment. Journal of Information Technology Education, 2003.
8. Douglas E. Mitchell and William G. Spady, (1978) "Organizational Contexts for Implementing Outcome-Based Education," Educational Researcher.
9. Harden RM, Crosby JR, Davis MH. An introduction to outcome-based education. Med Teacher 21(1), 1999. International Journal of Pure and Applied Mathematics Special Issue

10. McNeir G. Outcome-based education: Tools for restructuring. Oregon School Study Council Bulletin 36(8), 1993.
11. Michael J. Lawson and Helen Askell Williams, “Outcomes-based education”, discussion paper, 2007

| **Relevance of Learning the Course/ Employability of the Course** |
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| The course "Assessment Techniques in Outcome-Based Education (OBE)" is highly relevant and can significantly enhance employability for several reasons:<br>**Alignment with Modern Educational Practices**: OBE is increasingly being adopted in educational institutions worldwide. Understanding and implementing OBE principles can make you a valuable asset to schools and universities looking to improve their assessment practices.<br>**Comprehensive Skill Set**: The course covers a wide range of assessment methods, including traditional quizzes, performance-based assessments, and authentic assessments. This diverse skill set can make you adaptable and capable of handling various assessment scenarios.<br>**Technological Proficiency**: With a focus on the use of technology in assessment, you'll be well-equipped to utilize modern tools and platforms, which are essential in today's digital learning environments.<br>**Data Analysis and Continuous Improvement**: The ability to analyse assessment data and use it to inform teaching practices is a highly sought-after skill. This course prepares you to contribute to continuous improvement in educational settings.<br>**Ethical and Legal Considerations**: Understanding fairness, equity, and academic integrity in assessment ensures that you can create a just and inclusive learning environment, which is crucial for any educational institution.<br>**Practical Experience**: The combination of theoretical knowledge and practical workshops ensures that you not only understand the concepts but also know how to apply them effectively in real-world situations.<br>**Reflective Practice**: Developing a reflective and continuous improvement mindset can help you stay current with educational trends and continuously enhance your teaching and assessment practices. |

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| | **MAHATMA GANDHI UNIVERSITY**<br>**Graduate School** |
| | **4 + 1 Integrated UG and PG Programme** |

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|---|---|---|---|
| **School** | School of Pedagogical Sciences | | |
| **Programme** | 4 + 1 Integrated UG and PG Programme | | |
| **Course Title** | **Data Analysis and Interpretation in Research** | | |
| **Course Designer** | Dr Smitha S | | |
| **Course Type** | VAC (Value Added Course) | | |
| **Course Level** | 200-299 | | |
| **Course Code** | MG4VACUPS207 | | |
| **Course Overview** | This course on Data Analysis and Interpretation in Research aims to equip students with the knowledge and skills necessary to analyze and interpret data within a research context. It covers a range of statistical methods, data visualization techniques, and interpretation strategies, emphasizing practical applications and the use of software tools for data analysis. | | |
| **Semester** | Fourth Semester | **Credit** | 3 |
| **Total Student Learning Time** | **Instructional hours for theory** | **Instructional hours for practical/lab work/fieldwork** | |
| | 45 hours | 30 hours | |
| **Pre-requisite** | • Basic understanding of research methodologies.<br>• Familiarity with basic statistical concepts (e.g., mean, median, mode, standard deviation).<br>• Proficiency in using common software applications such as Microsoft Excel.<br>• Basic knowledge of data collection methods. | | |

**COURSE OUTCOMES (CO)**

| CO No. | Expected Course Outcome | Learning Domains | PSO No. |
|---|---|---|---|
| | *Upon completion of this course, students will be able to;* | | |
| 1 | Analyze and interpret basic research data effectively using statistical methods. | Cognitive | |
| 2 | Utilize fundamental data visualization techniques for effective data interpretation. | Cognitive, Psychomotor | |
| 3 | Apply introductory statistical tools and techniques to research data analysis. | Cognitive, Psychomotor | |

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| 4 | Differentiate between common data analysis methods and select appropriate approaches. | Cognitive | |
| 5 | Interpret and construct basic visualizations (e.g., scatter plots) for data analysis. | Cognitive, Psychomotor | |
| 6 | Develop and apply simple criteria for estimation in research data analysis. | Cognitive, Affective | |

**COURSE CONTENT**

| **Module 1: Foundations of Data Analysis in Research** | 20 Hours **(T)**+ 10 Hours **(P)** |
|---|---|
| • Introduction to Data Analysis: Definition, scope, and significance in research<br>• Historical Development: Evolution of data analysis techniques<br>• Theoretical Frameworks: Descriptive statistics & Inferential statistics<br>• Current Trends and Future Directions: Big data, machine learning, and AI in data analysis<br>• Data Collection Methods: Surveys, experiments, observational studies<br>• Data Cleaning: Handling missing data, outliers, and errors<br>• Data Organization: Structuring data for analysis<br>• Data Management: Ethical considerations and best practices | |
| **Module 2: Statistical Tools and Software for Data Analysis** | 15 Hours **(T)**+ 10 Hours **(P)** |
| • Introduction to Statistical Software: Microsoft Excel, SPSS, jamovi<br>• Descriptive Statistics: Measures of central tendency and dispersion<br>• Inferential Statistics: Hypothesis testing, correlation analysis<br>• Introduction to Multivariate Analysis: Regression<br>• Hands-on Practice: Using software for data analysis | |
| **Module 3: Data Visualization and Interpretation** | 10 Hours **(T)**+ 10 Hours **(P)** |
| • Principles of Data Visualization: Effective graphical representation of data<br>• Common Visualization Techniques: Bar charts, histograms, scatter plots<br>• Reporting Results: Writing research reports and presenting findings (Practical)<br>• Addressing Challenges: Ensuring accuracy and avoiding misinterpretation | |

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| **Mode of Transaction** | • **Classroom activities:** Lectures, discussions, tool demonstrations.<br>• **Field activities:** Case studies, real-world applications.<br>• **Lab-based activities:** Hands-on workshops, Data analysis exercises |

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| **Mode of Assessment** | • Tool evaluation reports<br>• Presentations/Seminar/Assignment<br>• Quizzes/MCQ<br>• Research report projects<br>• Data analysis project reports<br>• Final exam |
| **Practical** | • Using Excel or SPSS to compute measures of central tendency (mean, median, mode) and dispersion (standard deviation, variance).<br>• Exploring and discussing how big data and machine learning tools can enhance research data analysis. |

**Learning Resources**


- Creswell, J. W., & Creswell, J. D. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
- Field, A. (2017). *Discovering Statistics Using IBM SPSS Statistics*. SAGE Publications.
- Montgomery, D. C., & Runger, G. C. (2018). *Applied Statistics and Probability for Engineers*. John Wiley & Sons.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2019). *Qualitative Data Analysis: A Methods Sourcebook*. SAGE Publications.


| **Relevance of Learning the Course/ Employability of the Course** |
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| Mastering fundamental data analysis techniques is crucial for undergraduates across various academic domains. This course on Data Analysis and Interpretation in Research serves as a cornerstone, imparting essential skills in data analysis, thereby amplifying students' prospects in fields dependent on informed decision- making and data interpretation. By completing this course, students will possess the necessary acumen to contribute meaningfully to research endeavors and pursue advanced studies or careers in data-centric industries. |

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| | **MAHATMA GANDHI UNIVERSITY**<br>**Graduate School** |
| | **4 + 1 Integrated UG and PG Programme** |

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|---|---|---|---|
| **School** | School of Pedagogical Sciences | | |
| **Programme** | 4 + 1 Integrated UG and PG Programme | | |
| **Course Title** | **Vedic Mathematics** | | |
| **Course Designer** | Dr Smitha S | | |
| **Course Type** | VAC (Value Added Course) | | |
| **Course Level** | 200-299 | | |
| **Course Code** | MG4VACUPS208 | | |
| **Course Overview** | This course on Vedic Mathematics introduces students to ancient Indian mathematical techniques that offer simplified, fast, and efficient methods for solving complex mathematical problems. It covers core principles, sutras (aphorisms), and their applications in arithmetic, algebra, and geometry, emphasizing practical use in contemporary mathematical problem-solving and aptitude development. | | |
| **Semester** | Fourth Semester | **Credit** | 3 |
| **Total Student Learning Time** | **Instructional hours for theory** | **Instructional hours for practical/lab work/fieldwork** | |
| | 45 hours | 30 hours | |
| **Pre-requisite** | • Basic knowledge of arithmetic operations.<br>• Interest in mathematical problem-solving and computational techniques. | | |

**COURSE OUTCOMES (CO)**

| CO No. | Expected Course Outcome | Learning Domains | PSO No. |
|---|---|---|---|
| | *Upon completion of this course, students will be able to;* | | |
| 1 | Understand the origin and significance of Vedic Mathematics. | Cognitive | |
| 2 | Apply Vedic sutras for solving arithmetic and algebraic problems. | Cognitive, Psychomotor | |
| 3 | Simplify complex calculations using Vedic mathematical techniques. | Cognitive | |

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| 4 | Develop problem-solving speed and accuracy through Vedic methods. | Psychomotor | |
| 5 | Explore connections between Vedic Mathematics and modern math. | Cognitive, Affective. | |

**COURSE CONTENT**

| **Module 1**: **Foundations of Vedic Mathematics** | 20 Hours **(T)** +10 Hours **(P)** |
|---|---|
| • Introduction to Vedic Mathematics: Origin, historical background, and significance.<br>• Core Principles: Vedic sutras (aphorisms) and sub-sutras.<br>• Advantages of Vedic Mathematics: Speed, efficiency, and cognitive development.<br>• Basic Techniques: Multiplication, division, addition, subtraction using Vedic sutras.<br>• Applications in Daily Life: Simplified mental calculations for real-world scenarios. | |
| **Module 2: Advanced Techniques and Applications** | 15 Hours **(T)**+ 10 Hours **(P)** |
| • Algebraic Applications: Solving equations using Vedic sutras.<br>• Identities, Squares and Cubes: Simplified computation techniques.<br>• Geometric Applications: Basic concepts related to circles and triangles.<br>• Integration with Modern Mathematics: Relevance to current computational tools and algorithms. | |
| **Module 3: Contemporary Relevance and Skill Development** | 10 Hours **(T)**+ 10 Hours **(P)** |
| • Vedic Mathematics in Competitive Exams: Enhancing speed and accuracy for aptitude tests.<br>• Integration in Modern Education: Curriculum applications and teaching practices.<br>• Research Insights: Studies on the impact of Vedic Mathematics on cognitive development.<br>• Future Prospects: Vedic Mathematics in technological advancements. | |

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| **Mode of Transaction** | • **Classroom activities:**<br>➢ Lectures, discussions, and problem-solving demonstrations.<br>• **Field activities:**<br>➢ Workshops and peer-to-peer teaching sessions.<br>• **Lab-based activities:**<br>➢ Practice sessions, simulations, and competitive test preparation. |
| **Mode of Assessment** | • Assignment-based problem-solving portfolios.<br>• Presentations on Vedic sutras and applications.<br>• Quizzes and multiple-choice tests.<br>• Final exam involving theoretical and practical components. |

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| **practical** | • Solve a series of arithmetic problems (addition, subtraction, multiplication, division) using Vedic sutras.<br>• Individually solve a set of algebraic equations (e.g., linear and quadratic equations) using specific Vedic sutras.<br>• Work on real-life scenarios like calculating total shopping costs, calculating discounts, or determining travel time. |

**Learning Resources**


- Bharati Krishna Tirthaji. (1992). **Vedic Mathematics**. Motilal Banarsidass Publishers.
- Williams, K. (2005). **Discover Vedic Mathematics**. Inspiration Books.
- Agrawal, S. (2014). **Vedic Mathematics Made Easy**. Jaico Publishing House.
- Glover, J. (2009). **Vedic Mathematics for Schools (Series 1-3)**. Motilal Banarsidass Publishers.
- Kosla, D. (2010). **The Sutras of Vedic Mathematics**. Vedic Maths Forum.


| **Relevance of Learning the Course/ Employability of the Course** |
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| This course on Vedic Mathematics equips students with innovative problem-solving skills, enhancing their cognitive abilities and numerical proficiency. It is particularly beneficial for careers in education, competitive exam preparation, financial analysis, and algorithmic research, fostering a unique edge in fields requiring mathematical aptitude and precision. |