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[OBE DESIGN- GEOGRAPHY DEPARTMENT]

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PREFACE

Outcome Based Education (OBE) is the educational approach which focuses on student centric education in the context of development of personal, social, professional and knowledge (KSA) requirements in one's career and life. It is the decade ago curriculum development methodology. The educational triangle of _LEARNING-ASSESSMENT-TEACHING_ is the unique nature of the OBE approach. The curriculum practices such as Competency Based Curriculum, Taylor's Model of Curriculum Development, Spadys' Curriculum principles, Blooms taxonomy and further use of assessment methodologies like, Norm-reference testing and Criterion reference testing, etc is being practiced since decades. It is also interesting to know that, globally, different countries and universities adopts the curriculum development models/approaches such as, CDIO (Conceive-Design-Implement-Operate), Evidenced Based Education, Systems' Approach, etc as the scientific and systematic approaches in curriculum design.

The authorities of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (M.S.) in-lieu of accreditation standards of National Assessment and Accreditation Council, decided to opt for Outcomes Based Education (OBE). As the part of the decision, different meetings, workshops and presentations were held at the campus of university.

This document is the outcome of different meetings and workshops held at university level and department level. The detailed document is designed and the existing curriculum of the department is transformed in to the framework of OBE. This is the first step towards the implementation of OBE in the department. The document will serve all stakeholders in the effective implementation of the curriculum. The OBE is continuous process for quality enhancement and it will go a long way in order to enhance the competencies and employability of the graduates/Post-graduates of the university department.

Head of Department

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OUTCOME BASED EDUCATION

Faculty of Humanities

Department of Geography

1. Mission:

Mission Statement
The Department of Geography's mission is to provide students of Post-graduation and research program with educational experiences to conduct vital research that produces valuable geo-knowledge & publications. The department is committed to outstanding teaching and scholarly activities within the framework of academic freedom and diversity of ideas. The Department of Geography is dedicated to the advancement of knowledge and to serving our communities, from local to global.

2. Vision:

Vision Statement
To lead the development of academic, educational, and research directions of human and natural systems, Urban and Rural Problems and geospatial information science, harnessing the integrative nature of geographic science to answer fundamental questions of global importance.

3. Title of the Program (s):
a. **Master of Geography**

4. Program Educational Objectives:
The program educational objectives (PEO) are the statement that describes the career and professional achievement after the program of studies (graduation/ post-graduation). The PEO s are driven form question no. (ii) of the Mission statement (What is the purpose of organization). The PEOs can be minimum three and maximum five.
PE01: In-depth knowledge of geography and related domains to design/solve/ evolve geographic solutions/problems.

PEO2: To provide the professional services to private and public organization through competitive examination.

PEO3: To provide expertise and consultancy services in the private and public sector and to be an entrepreneur/professional consultant.

PEO4: To opt for higher education, research and to be a life-long learner.

PEO5: To provide value based and ethical leadership to the profession and social life.

5. Program Outcomes:

The program outcomes (PO) are the statement of competencies/ abilities. POs are the statement that describes the knowledge and the abilities the graduate/ post-graduate will have by the end of program studies.

a. Describe the unifying themes of both human and physical geography as well as have a working knowledge of the discipline's diverse conceptual and methodological approaches;
b. Demonstrate an ability to develop research questions, critically understand quantitative and qualitative data sources, data bias, and data analysis and presentation, and conduct research using primary and/or secondary source material;
c. Identify, characterize, and explain spatial patterns and structures, the interrelationship between people and places, and the interactions between nature and society;
d. Recognize applications of geography in everyday life;
e. Demonstrate ability to present geographic concepts, approaches, methodologies, and applications in oral, written, and cartographic and other visual forms. Demonstrate team work, values and social and professional ethics.

The sample POs for different programs are stated in ***Annexure-A.***

6. Course- Program outcome Matrix:

The Program Outcomes are developed through the curriculum (curricular/co-curricular-extra-curricular activities). The program outcomes are attained through the course implementation. As an educator, one must know, ***"to which POs his/her course in contributing?"***. So that one can design the learning experiences, select teaching method and design the tool for assessment. Hence, establishing the Corse-PO matrix is essential step in the OBE. The course-program outcomes matrix indicates the co-relation between the courses and program outcomes. The CO-PO matrix is the map of list of courses contributing to the development of respective POs.

The CO-PO MAPPING is provided in the below table.

Course Title	a	b	c	d	e		
401	*		*	*			
402	*		*	*			
421	*		*	*	*		
451	*		*	*			
403	*	*	*	*			
404	*		*	*			
424	*	*	*	*	*		
452	*		*	*			
405	*		*	*			
406	*	*	*	*	*		
425	*		*	*			
453	*		*	*			
407		*		*	*		
408		*		*	*		
427		*		*	*		
454		*		*	*		

7. Course Outcomes (for all courses):

The course outcomes are the statement that describes the knowledge & abilities developed in the student by the end of course (subject) teaching. The focus is on development of abilities rather than mere content. There can be 5 to 7 course outcomes of any course. These are to be written in the specific terms and not in general. The list of course outcomes is the part of *__Annexure-B__* attached herewith.

8. Set Target levels for Attainment of Course Outcomes:

The course outcome attainment is assessed in order to track the graduates' performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates' abilities through appropriate learning & teaching strategies. In order to assess students' performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment are measured/calculated. In order to calculate the program outcome attainment, the course outcome attainment is calculated. Prior to that, the course-program outcome mapping is done.

9. Set Target level for Attainment of Program Outcomes:

The program outcome attainment is assessed in order to track the graduates' performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates' abilities through appropriate learning & teaching strategies. In order to assess students' performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment and program outcome

attainment is measured/calculated. The program outcome attainment is governed by curricular, co-curricular and extra-curricular activities including the stakeholders' participation. The direct method and indirect method is adopted to calculate the PO attainment. The direct method implies the attainment by course outcomes contributing to respective program outcomes. And indirect method is the satisfaction/feed-back survey of stakeholders. In order to calculate the program outcome attainment, the course outcome attainment is calculated. Prior to that, the course-program outcome mapping is done.

The set target level is the set benchmark to ensure the continuous improvements in the learners/ graduates' performance.

10. Course Attainment Levels:

a. CO attainment is defined/set at three levels;
b. The CO attainment is based on end term examination assessment and internal assessment;
c. The Co attainment is defined at three levels in ascending order-
   i. e.g. For end term and internal examination;
   ii. Level-1: 40% students scored more than class average
   iii. Level-2: 50% students score more than class average;
   iv. Level-3: 60% students score more than class average.
d. The target level is set (e.g. Level-2). It indicates that, the current target is level-2; 50% students score more than class average. The CO attainment is measured and the results are obtained. Based on the results of attainment, the corrective measures/remedial action are taken.
e. CO Attainment= 80% (Attainment level in end term examination) + 20% (Attainment level in internal examination).

11. Program attainment Level:

a. PO attainment is defined at five levels in ascending order;
b. The PO attainment is based on the average attainment level of corresponding courses (Direct Method) and feed-back survey (Indirect method);
c. The PO attainment levels are defined / set as stated below;
   i. Level-1: Greater than 0.5 and less than 1.0 (0.5>1)- Poor
   ii. Level-2: 1.0>1.5-Average
   iii. Level-3: 1.5>2.0-Good
   iv. Level-4: 2.0>2.5-Very Good
   v. Level-5: 2.5>3.0 -Excellent
d. The PO attainment target level is set/defined (say, Level-4). It implies that, the department is aiming at minimum level-4 (very good) in the performance of abilities by the graduates. Based upon the results of attainment, the remedial measures are taken;
e. PO Attainment= 80% (Average attainment level by direct method) + 20% (Average attainment level by indirect method).

12. The Results of CO Attainment:

The Results of CO attainment are provided in Annexure-C

For Example-

GEO-404:

e.g. For end term and internal examination;

i. Level-1: 40% students scored more than class average
ii. Level-2: 50% students score more than class average; iv.
iii. Level-3: 60% students score more than class average

Average Marks in External examination: 50.44 = i.e. 54.00

% Students score more than 54 is 31/49 i.e. 63.26% i.e. Levl-3

Average Marks in Internal examination= 11.20= i.e. 11.00

% Students score more than 11.00 is 25/49= 51.02%, i.e. Level-2

A(CO)GEO-404= 80% (3)+20(2)

=2.4+0.4

=2.8

Table No. 1.0: CO Attainment Level

Course Code	Course Attainment Value	Target Attainment Level	Fully Attained/ Not Attained	Remedial Measures
401	3	2	**Fully Attained**	
402	2.8	2	**Fully Attained**	
421	2.8	2	**Fully Attained**	
451	2	2	**Fully Attained**	
403	2	2	**Fully Attained**	
404	2.8	2	**Fully Attained**	
424	2.2	2	**Fully Attained**	
452	3	2	**Fully Attained**	
405	2.8	2	**Fully Attained**	

406	3	2	**Fully Attained**	
425	3	2	**Fully Attained**	
453	1.8	2	**Not Attained**	Assignments, Tutorials, Remedial coaching
407	1.4	2	**Not Attained**	Assignments, Tutorials, Remedial coaching
408	1.2	2	**Not Attained**	Assignments, Tutorials, Remedial coaching
427	1.2	2	**Not Attained**	Assignments, Tutorials, Remedial coaching
454	1	2	**Not Attained**	Assignments, Tutorials, Remedial coaching

13. The Results of PO Attainment:

The Results of Po attainment are provided in Annexure-C

For Example:

PO Attainment= 80% (Average attainment level by direct method) + 20% (Average attainment level by indirect method).

A (PO)a= 80% (3+2.8+2.8+2+2+2.82+2+3+2.8+3+3+1.8)/12 +20% (2.58)

   = 80% (2.583333)+ 20%(2.58)

   = 2.06+0.516=2.576

=2.58

Table No. 2.0 PO Attainment Level

PO/PSO number	PO Attainment Value	Target Attainment level	Fully attained/ Not Attained	Remedial Measures
A	2.58	4	Fully attained	Not applicable
B	1.71	4	Not attained	Designing the remedial measures for the corresponding courses such as Assignments, Tutorials, Remedial coaching
C	2.58	4	Fully attained	Not applicable
D	2.24	4	Fully attained	Not applicable
e	1.83	4	Not attained	Designing the remedial measures for the corresponding courses such as Assignments, Tutorials, Remedial coaching

14. Planned Actions for Course Attainment:

The courses having CO attainment level less than Level-2 shall be addressed by planning remedial measures like assignments, tutorials and lectures.

15. Planned Actions for Program Outcome Attainment:

The PO having attainment level less than level-4 shall be addressed by designing remedial measures for the corresponding courses contributing to the respective PO.

ANNEXURE-B
COURSE OUTCOMES

MORPHOLOGY

1. To classify and describe landforms in a variety of environmental settings.
2. To explain the theories of Uniformitarianism and Catastrophism, and appreciation.
3. To describe the significance of spatial and temporal scales in geomorphology.
4. To analyze geomorphological systems in terms of resisting and driving forces.
5. To explain the surface processes important in the creation of landforms.
6. To quantitatively use and evaluate geomorphological data with numerical, statistical and cartographical methods.
7. Ability to analyze relationships between physical and human aspects of environments and landscapes.

CLIMATOLOGY

1. Describe the meteorology and climatology
2. Describe the scientific problems addressed by metrology and climatology.
3. Describe the methods and technics of the data gathering
4. To perform meteorological measurements and use meteorological data for climatological analysis.
5. Describe/implement the basic meteorological process in the Earth atmosphere.
6. To describe the climate diversity over the Earth and knowledge of the basic climatic zones.
7. To perform climatological analysis on the basis of meteorological data.

Tourism Geography

1. To describe the tourism geography and cognitive framework related to the tourism geography and will be able to explain the importance of strategy and planning to improving sustainable tourism
2. To evaluate the natural geographic resources and classes of tourism.
3. To evaluate the human and cultural geographic resources and classes of tourism.
4. To explain the international tourism transportation and tourist flow.
5. To relate the natural environment characteristics and tourism.
6. To relate the human and cultural environment characteristics and tourism.

Oceanography

1. Analyze and evaluate scientific data to create a conclusion about oceanographic processes.
2. Predict distribution of organisms based on physical and chemical hydrographic data.

3. Provide examples of the interdisciplinary nature of oceanography.
4. Explain interrelationships of oceans to other Earth Systems.
5. Evaluate the interaction between humans and the ocean.
6. Explain formation of seafloor features/landforms.
7. Describe ocean chemistry and processes of nutrient cycling.

Geography of Water Resources

1. Explain different physical and social factors underpinning water issues and demonstrate relationships among these issues.
2. To demonstrate/describe the knowledge of the formation, use, conservation and management of water resources including legal, economic, political and societal factors and the evaluation of attempts to manage water resources.
3. To describe hydrology, water availability and quality, hazards, use, demand and allocation.
4. Compare the range of approaches and tools proposed to address critical issues in water by various local, national, and international levels.
5. Describe and distinguish between different stakeholder perspectives on major water issues.

Geography of Population

1. Analyze the types of data of population geography.
2. Describe the distribution and density of population.
3. Apply the theories of population in arriving at solutions to the issues.
4. Investigate Current Issues and Problems in India.
5. Interpretation of Topo-sheet, weather reports, Cartographic techniques & Geo Statistical Methods.
6. Read and interpret the mechanism function of topographical maps and interpretation if weather images.

Geographical Thoughts

1. To describe and analyse research projects in relation to broader historical discourses and concepts.
2. Describe the different theoretical perspectives and concepts can be brought to bear on the projects.
3. Explain the relation between geographical thought and practice.
4. Describe the key figures, debates, concepts, objects and problems that have driven the development of contemporary geographic thought.
5. Analyse the key debates and discourses in the discipline.

6. Apply theoretical, practical and scientific dimensions of the discipline from the perspective of the history.

Agriculture Geography

1. Analyse the basic characteristics of physical environments for agriculture in tropical and temperate zones.
2. Recognize the relationship between physical environments, culture, and political economy in the historic development of food and agricultural systems.
3. Identify the basic components of farming systems and understand their interrelatedness.
4. Explore linkages between local and global agricultural change in the world's food system.
5. Investigate current issues related to food and agricultural geography.

Geography

1. Analyze the earth as an integrated human-environment system by examining dynamic flows, interactions and exchanges at different spatial and temporal scales.
2. Reflect critically upon the scope and evolution of the diverse discipline of geography.
3. Collect and analyze geographical data and interpret its significance within the context of human-environment relations.
4. Describe the geographical concepts and data effectively using oral, written and visual forms.
5. Identify and address geographical questions using creativity and critical thought in diverse settings (e.g. classroom, lab, field, community).

Regional Geography of India

1. Critically analyze current and historical cultural concepts effecting different regions of the country and the inter-relationships between these regions.
2. Assess current socio-economic, cultural and political issues resulting from the interactive and opposing forces of homogenization and diversification.
3. Examine geographic factors that have influenced the student's life on a national and local level.
4. Analyze how varying conditions of the physical and/or cultural environment contribute to human diversity.
5. Reflect on their developing self-awareness of diverse populations and viewpoints as well as how it impacts the way they interact with a changing world.

Settlement Geography

1. Analyse and describe the philosophy/logic/theory of human settlement in certain areas.
2. Describe the parameters of ecosystems influence community development.
3. Describe the needs of humans and how these needs impact the physical environment.
4. Describe the reasons why people settle where they do.
5. Analyze the ecosystems having more people living in them than others.

Political Geography

1. Describe the concepts, theories of Political geography
2. Apply methods, principles and models of geographic thought appropriate for analyzing politics and political relations.
3. To use geography in order to gain an understanding of global political actions, related military, ethnic, or religious conflicts, cultural practices, economic relationships.
4. To analyse the geography with national/international implications.
5. Define and assess the relative importance of forces of conflict and cooperation among peoples, societies and states as they influence the division and control of the Earth's surface.

Biogeography

1. Describe variety of processes which can be responsible for species distributions at global, regional, landscape and island scales.
2. Analyse the relative importance of processes of speciation, extinction, dispersal, and ecological succession in explaining bio-geographical patterns.
3. Describe the role of humans in modifying plant and animal distributions, with a specific understanding of the issues surrounding alien species introductions.
4. Application of knowledge from the past can inform future predictions of biogeographic change, while realizing the limitations of this approach.

ANNEXURE-C
RESULTS OF CO-PO ATTAINMENT

M. A. GEOGRAPHY 40-50-60					
Course Title	a	b	c	d	e
401	3		3	3	
402	2.8		2.8	2.8	
421	2.8		2.8	2.8	2.8
451	2		2	2	
403	2	2	2	2	
404	2.6		2.6	2.6	
424	2.2	2.2	2.2	2.2	2.2
452	3		3	3	
405	2.8		2.8	2.8	
406	3	3	3	3	3
425	3		3	3	
453	1.8		1.8	1.8	
407		1.4		1.4	1.4
408		1.2		1.2	1.2
427		1.2		1.2	1.2
454		1		1	1
	2.583333	1.714286	2.583333	2.2375	1.828571