Learning Outcomes Based Curriculum Framework (LOCF) under the International Standards of Outcome-Based Education (OBE)

for the Post Graduate Programmes at Thunchath Ezhuthachan Malayalam University



InternalQuality AssuranceCell (IQAC)
Thunchath Ezhuthachan Malayalam University

Learning Outcomes based Curriculum Framework (LOCF) under the international standards of Outcome-Based Education (OBE)

for the Post Graduate Programmes at Thunchath Ezhuthachan Malayalam University

SI No.	Contents							
1	Introduction							
2	Outcome-Based Education (OBE)							
3	Benefits of OBE							
4	Outcome Based Education (OBE) Process in Thunchath Ezhuthachan							
	Malayalam University							
	The OBE's 6 step process in Flow Chart							
4.1	OBE Process							
4.1.1.	Step 1: Establish Outcomes of POs and PSOs							
	Programme Outcomes (POs)							
	Programme Specific Outcomes (PSO)							
	Course Outcomes (CO)							
4.1.2	Step 2: Alignment of Curricula with Adopted Outcomes - Curriculum							
	Map							
4.1.3	Step 3 : Benchmarks							
4.1.4	Step 4 : Identification of Assessment Methods and Measures							
A.	Direct Measures							
A.1	Course Embedded Assessment methods							
a.	Embedded Questions (EQ) in Examinations							
b.	Assessment Tasks other than Examination							
A.2	Rubrics							
A.3.	Measurement of PSOs							
A.4.	Communication of assessment task							
	Table 1 : Assessment task for measuring PSO							
B.	Indirect measures							
4.1.5	Step 5. Collection and Analysis of Assessment Information							

4.1.6	Step 6: Using OBE for Continuous Improvement – The Cyclical	
	Nature of OBE Process	
4.1.6.1.	The meaning of the Cyclical Nature of OBE Process	
5.	Documentation of Assessment Activities	
6.	Outcome based Curriculum	
7.	The schools' path OBE	
8	Appendix	

Learning Outcomes based Curriculum Framework (LOCF) under the International Standards of Outcome-Based Education (OBE)

for the Post Graduate Programmes at Thunchath Ezhuthachan Malayalam University

1. Introduction

Teaching is a challenging responsibility that involves educating and empowering students and, through them, facilitating societal transformation for healthy living in a country like India that is diverse in terms of class, caste, religion, and ethnic and linguistic groups. Through this process, students gain the conceptual, ethical, and professional skills necessary to accomplish their life goals. The qualitative aspects of student production, which are primarily quantified in terms of marks and scores obtained through the administration of exams that represent the knowledge received, have been the main focus of the contemporary higher education system. It doesn't stimulate the capacity to think creatively in some situations or to respond skilfully when circumstances call for contextual action. Frequently, the marks, scores, and mark-sheets may not accurately reflect the way the students really build themselves.

2. Outcome-Based Education (OBE)

With the implementation of its Quality Mandate (QM) in 2018, the University Grants Commission (UGC) launched an initiative to raise the standard of higher education in India. Curriculum revisions have gained momentum due to the UGC's quality mandate, which aims to provide students with the necessary information, skills, values, and attitude. Thus, in accordance with the global norms of outcome-based education (OBE), QM advises pushing for the development of a Learning Outcomes-based Curriculum Framework (LOCF).

Table 1. Differences between Traditional Teaching and OBE.

Category	TraditionalTeaching	Outcome BasedEducation(Tr ansformationalTea ching)
Teaching philosophy	Teacher-centered	Learner-centered

Focus Points	Number of students graduated	Programme outcomes, programme specific outcomes and course outcomes; Course Outcome that describes what a student is expected to know and Can do at the end of the course.
Achievements	Grades and/or ranks ofthestudents	Attitude, Skills and realknowledgeofstudents
	Number of students	Professionalachie
	employed or	vements
	recruited through	ofGraduates
	campus selection	
Role of Instructor	Teacher	Teacher cum Facilitator
Degree	Compartmentalized	Integrated nature of
	Programmes	graduation, post-graduation
	Eg:-BA/BSc,M A /	and research programmes
	M.Sc. MPhil,	Eg:-4 year BA/BSc, I year
	and PhD	MA/MScProgrammes and
	programmes.	PhDProgramme

According to LOCF mandates, it is imperative to have a periodic curriculum review process in place to guarantee that university programs meet global standards and adapt to the rapidly changing world in which learners must function. Thunchath Ezhuthachan Malayalam University hence made the decision to transform all of its programs to the Outcome-Based Education (OBE) mode from this academic year onwards (2021 onwards).

3. Benefits of OBE

The old educational system is being replaced with the OBE Framework, which places a stronger emphasis on program and course objectives. It ensures that, by an ongoing process of improvement, the curriculum, teaching and learning techniques, and evaluation methods will all be continuously improved. Every choice, including those pertaining to curriculum, education, and evaluation, is made with the best interests of achieving the targeted results in mind. Historically, instructors have used standardized tests to gauge students' learning. On the other hand, learning is defined in outcome-based education as what pupils can show they understand.

Benefits of OBE:

- More directed and coherent curriculum.
- graduate would be more relevant to the industry and other stakeholders (more well-rounded graduates)

Continuous Quality Improvement is in place.

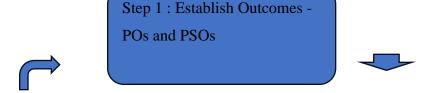
OBE shifts from measuring input and process to measure the output (outcome)

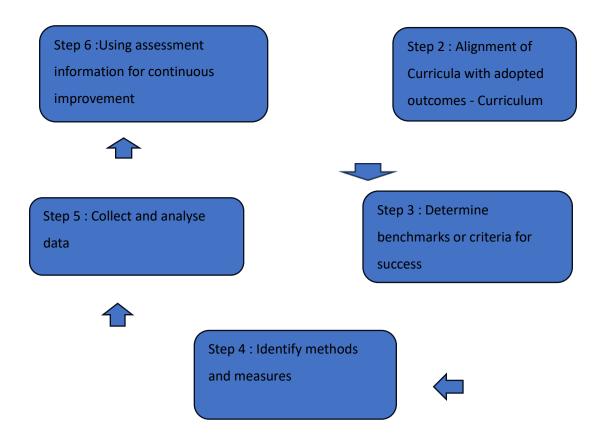
4. Outcome Based Education (OBE) process in Thunchath Ezhuthachan Malayalam University

OBE is a thorough method for setting up and running a curriculum, that is centered around and characterized by the effective learning demonstrations expected of every student. The phrase obviously refers to organizing and concentrating all aspects of an educational system. Here, what is expected is ensuing that the necessary requirements for every student to be able to do successfully upon completion of their studies. OBE is an educational method that bases curriculum and instruction decisions on the exit learning objectives that students must demonstrate to complete a course or program. At the conclusion of their academic journey, every student ought to have attained the desired results.

Ensuring that programs are continuously improved in order to meet the needs of all parties and preserve curricular relevance is one of OBE's primary goals. Stated differently, it guarantees that the school's postgraduate program offered the following year will be superior to the one offered this year. An OBE system has been proposed and to be implemented at various schools of Thunchath Ezhuthachan Malayalam University, as a quality-assurance approach to improving teaching and learning outcomes and processes. This OBE plan to incorporate the outcomes assessment process to be followed in the schools at the university. OBE should be a key driver of the curriculum management in all the schools of the university.

The OBE is a 6 step process as shown in figure 1.





4.1 OBE Process

4.1.1. Step 1: Establish Outcomes of POs and PSOs

Learning Outcomes begin with an introductory phrase indicating what students will be able to do at programme or course completion.

A statement of a learning outcome should contain

- a verb describing an observable action.
- focus on the student as a performer.

Thus, a learning outcome states, at the end of a programme/ course/ instructional unit

- "what a student is expected to be able to do" (verb)
- "how is a student expected to be able to think"

Learning outcome can be

- Programme Outcomes (PO)
- Programme Specific Outcomes (PSO)
- Course Outcomes (CO) of a course

Programme Outcomes (POs): The skills that students gain at the conclusion of the programme are known as programme outcomes. POs show the general educational requirements for every degree program. Because of the

comprehensive educational experience that a program offers, they also mirror the main cognitive and behavioral skills that a program aims to impart in its students. The goal and characteristics of the university also reflects through the program outcomes of Thunchath Ezhuthachan Malayalam University.

Programme Outcomes (PO) of Thunchath Ezhuthachan Malayalam University

PO.1 Growth and development of Malayalam language

Understand the potential of Malayalam Language to serve as a corridor for global knowledge exchange, elevating the knowledge status of Malayalam language by engaging academic disciplines like social philosophy, science and social sciences, thereby realising the scope of regional languages for developing a knowledge society.

PO.2 Develop critical thinking

Inculcate confidence among the general public by demonstrating every knowledge resources by choosing Malayalam as the medium, thereby breeding a scientific outlook based on rational/ critical approach applicable at individual, social and institutional levels.

- PO.3 Gain ability to work independently in self-driven and lifelong learning and research activities, identifying appropriate resources and to perceive the evolutions happening in the fields of science and technology, thereby envisaging a society that can actively participate in resolving the societal hindrances that arise from time to time.
- PO.4 Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures in a global perspective; and to gain capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
- PO.5 Research-related skills: Ability to recognise cause-and-effect relationships, define problems, formulate and test hypotheses, analyse, interpret and draw conclusions from data, thereby developing a sense of inquiry and capability for asking relevant/appropriate questions, problematising, synthesising and articulating;
- PO.6 Cooperation/Team work: Ability to work effectively and respectfully with diverse teams, facilitating cooperative or coordinated effort to act together as a group or a team.
- PO.7 Problem solving: Develop capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, applying one's learning to real life situations.

PO.8 Analytical reasoning: Develop ability to analyse and synthesise data from a variety of sources, evaluate the reliability and relevance of evidence, identifying logical flaws and holes in the arguments of others thereby drawing valid conclusions and addressing opposing viewpoints.

PO.9 Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrating ability to access, evaluate, and use a variety of relevant information sources; and using appropriate software for analysis of data.

PO.10 Moral and ethical awareness/reasoning: Develop ability to embrace moral/ethical values in performing one's life, appreciating environmental and sustainability issues, formulating a position/argument about an ethical issue from multiple perspectives, adherence to enshrined values in the Indian constitution, and adopting objective, unbiased, truthful actions and ethical practices in all aspects of work.

PO.11 Scientific reasoning: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.

Programme Specific Outcomes (PSOs):

PSOs are declarations of expected competencies that outline the skills, graduates of a particular program should possess. The program's outcomes are generalizations that should not be evaluated on their own. As a result, a quantifiable aspect of the overall program outcome can be described by one or more Programme Specific Outcomes (PSOs), which can be derived from any programme outcome. For every program within a school, a committee of faculty members is responsible for creating Programme Specific Outcomes (PSOs). After receiving input from pertinent stakeholders, the entire faculty reviews the PSOs. A distinct set of program outcomes may be created for each program (Masters, PhD). Programme outcomes (POs) and Programme Specific Outcomes (PSOs) and assessment processes should be subjected to periodic review and changes as may be necessary, i.e., continuous improvement in assessment processes is expected. The University expects each school to review the outcomes and the assessment process once in every two years.

4.1.2 Step 2: Alignment of Curricula with Adopted Outcomes - Curriculum Map

Program outcomes and curriculum must be in line in order to demonstrate students that the work they accomplish in classes directly contributes to their attainment of the learning objectives. Learning objectives for courses and extracurricular activities are plotted on a curriculum map. These maps guarantee that pupils will

have more than enough chances to achieve the desired results. The alignment of course outcomes with program outcomes serves as the basis for this mapping.

Course Outcomes (COs) are statements that outline the measurable skills that students should possess by the end of the course. Every course curriculum module may contain a minimum of one outcome.

The mapping of POs and PSOs to specific courses, as well as the methodology for gauging PO and PSO attainment, are at the discretion of the course instructor. The school's OBE coordinator can gather this data and finish the mapping procedure. The courses and evaluation tools utilized for outcome assessment are indicated on the map. Every course, including electives and core courses, should be aligned with the program's objectives.

4.1.3 Step 3 : Benchmarks

Benchmark establishes a performance standard or success requirement for a PO. To decide whether or not student performance is acceptable, an acceptable internal performance baseline is developed.

The school may set a standard, such as requiring that at least 80% of students in each PSO category fall into the "meets expectations" or "exceeds expectations" categories.

4.1.4 Step 4: Identification of Assessment Methods and Measures

Numerous techniques can be used to gauge students' learning. Direct and indirect measures are the two groups into which the methodologies are typically divided. OBE emphasizes learning outcomes in a more direct manner. When direct assessment of the outcome is not possible, indirect measurements are employed to supplement it.

A. Direct Measures

Direct measures require students to demonstrate their knowledge and skills. They offer concrete, observable, and self-explanatory proof of the knowledge and skills that students have acquired as a result of a program, activity, or course (Suskie, 2004, 2009; Palomba and Banta, 1999). Students' actual work or behavior is measured and evaluated.

As a result, direct measures are those that evaluate real student work samples in order to gauge student learning. Examples of embedded assessments in courses are papers, projects, performances, presentations, exams, and so on. Direct measures are seen to be the most accurate for gauging the degree of student learning achievement on certain outcomes because they reflect what students can really do.

A.1 Course Embedded Assessment methods

The methods of course-integrated assessment integrate evaluation into routine classroom activities. As a result, it describes methods that can be applied in a classroom setting to evaluate students' learning, both individually and in groups.

Two- embedded questions and other PSO-based assessment techniques make up the majority of course embedded assessments.

a. Embedded Questions (EQ) in Examinations

An embedded question is one that is used to evaluate student learning in the course examination for the particular course that PSO is tied to. The tests for applying embedded questions may be decided by the course instructor. For instance, questions from Section C of the internal Examination II may be designated as embedded questions for courses that employ embedded questions as a form of assessment. The teachers can assess the questions and answers internally first, and then use the PSO rubric to classify the students as falling short of, meeting, or exceeding expectations for OBE purposes.

b. Assessment Tasks other than Examination

Assessment tasks other than examinations can be oral presentations, quizzes, individual assignments, fieldworks, practice-oriented projects, and more. Group assignments do not measure individual student learning; hence, individual student assignments or works are preferable for outcome assessment. To guarantee non duplication of works, the assignment's topic may vary from student to student, or it may need to be completed under carefully regulated conditions (under the teacher's supervision in a lab or class).

A.2 Rubrics

All direct measurements, such as embedded questions, course assignments, and other student performances, are analyzed and graded using rubrics for the aim of outcomes evaluation. A rubric offers more information than a single grade or mark and is an explicit set of criteria used for evaluating a certain kind of work or performance. Based on a rubric, faculty members evaluate each student separately and place them in one of the following categories:

- ‡ Exceeds expectation
- ‡ Meets expectation
- ‡ Below expectation

Assignments and presentations made by students may be included in the evaluation and assessment process. Next, as part of Continuous Assessment, each faculty member must assign a mark based on the evaluation criteria (which might be out of 10 or the maximum mark allowed for that instrument). After that, students must be categorized using the rubric in order to be assessed for the PO. When evaluating a student's writing for an OBE assignment, for instance, a case from a class will be examined in accordance with the course instructor's evaluation criteria. Students will then be categorized using a rubric designed for successful written communication.

Holistic and analytic rubrics can be developed by the school. All PSO assessments are to follow rubrics of the respective PSO.

A.3.Measurement of PSOs

The school has to give evidence as to the attainment of PSOs through measurement of outcomes. The OBE coordinator can decide the courses to be taken for measurement for particular batch in consultation with the faculty. This measurement should be taken for core courses or, for electives where more than 90% of students have enrolled. The courses considered for measurement for a particular batch will be decided in the faculty meeting and will change from year to year.

A.4. Communication of assessment task

The course instructor can mention the method of measuring the CO/PSO selected for measurement in the following format to the OBE coordinator. (preferably in the course plan of course information document).

Table 1 : Assessment task for measuring PSO

Course outcome	Assessment Task	Explanations
(CO)		
CO1 (PSO 1)	e.g. embedded question	
CO2 (PSO 2)	e.g. individual assignment	
CO3 (PSO 3)		

B. Indirect measures

Assessment that gauges ideas or thoughts regarding the knowledge, abilities, attitudes, experiences learned, views of services obtained, or opinions of employers of students or graduates. Although these kinds of assessments are vital and significant, they do not directly gauge students' achievement. They add to direct learning metrics by elucidating the process and motivation behind learning. Indirect measures include focus groups, surveys of employers, alumni, entry and exit surveys, polls of students regarding their education, and surveys conducted by employers. OBE-based questions may be included in one portion of the stakeholder survey if the school is already conducting them.

4.1.5 Step 5. Collection and Analysis of Assessment Information

The report must be sent to the OBE coordinator in the format specified by the faculty member taking the course that is mapped to a PSO or the faculty member overseeing the assessment event. The assessment committee also receives all of the comprehensive assessment records in addition to the summary data. The school can develop the time line and the sequence of the process, one sample is given below.

- a. Within two weeks of the end semester examination, the faculty member can send the PSO achievement report to OBE coordinator.
- b. Within one week, the OBE coordinator can consolidate all reports at programme level and send the report to school director.
- c. The school director will present the actions proposed at the end of every academic year. Assessment results should be prepared for each batch (cohort) separately (Senior batch and Junior batch). 2-year report will be the complete report of the batch with regard to the achievement of the PSOs.

4.1.6Step 6: Using OBE for Continuous Improvement –The Cyclical Nature of OBE Process

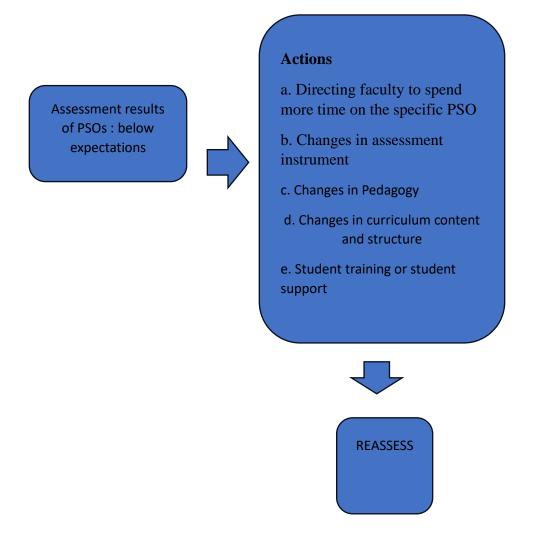
The goal is to ascertain what information the assessment (OBE) data can provide to enhance the Program. Closing the loop activities entails returning to the courses and subjects as well as the program overall and formulating plans to enhance the curriculum as a whole. Constant improvement via curriculum management is one of OBE's primary goals. The appropriate curricular modifications in terms of content, structure, and pedagogy can be made based on the assessment results.

4.1.6.1. The meaning of the Cyclical Nature of OBE Process

Enhancements may occur at the program or course level. If the course results show that students are not performing up to the expected standards, this presents a chance for teachers to come up with strategies for improving student performance. This could entail improving their methods of instruction, providing more time for discussion, delving further into challenging subjects, employing more case studies, and so forth. Any courses that are linked to a PSO can consider making pedagogical or other modifications if specific PSO outcomes fall short of the criteria, with the goal of meeting the benchmarks the following year. When conducting program reviews, assessment results might be one of the various sources of information that are available. At a programme level, assessment results can be one of the many sources of information which can be used when conducting programme reviews in terms of programme curriculum and architecture. If benchmarks are not met, the type of closing the loop actions can be

- Directing faculty to spend more time on the specific PO/PSO (which has not met benchmark)
 mapped to their courses
- improvements in assessment method/instrument used
- Changes in Pedagogy
- Changes in curriculum content
- Structure or sequence of courses
- Adding certain new courses which address the specific PSO
- Student training or student support

This is summarised as a chart- Actions can be taken in the following areas with regard to:



The consolidated report's conclusions and any necessary actions are intended to be applied to the incoming class of students (cohort) for the upcoming academic year. The program level assessment report and the suggested action plan must be provided to the faculty council at the conclusion of each academic year. The

university's IQAC director must receive a comprehensive report from the school's director outlining the conclusions and steps taken.

Self-improvement/Correction Process in OBE

Step 1: Individual faculty member sends the Assessment report in the prescribed format to the OBE coordinator of the school



Step 2 : OBE coordinator consolidates the reports, and sends the report to the school director



Step 3 : The school director in consultation with the faculty (if needed), makes recommendations for improvement and sends it to OBE coordinator



Step 4: Individual faculty member takes corrective Actions



Step 5: OBE coordinator consolidates the report at programme level and sends it to the school director, the school director sent a detailed

5. Documentation of Assessment Activities

The institution must record how and where assessment results have been used for curriculum enhancement, as well as provide examples of student performance on assessment measures, in order to maintain its accreditation and OBE. Records must be kept up to date for a minimum of three years. A sample of answer sheets for each exam with an embedded question must be kept up to date throughout the duration of the examination. It is necessary to investigate the viability of keeping the answer sheets in digital format. Documents to be maintained

- A) Embedded question
- Question paper
- Answer sheets
- B) Rubric based methods and measures
- Rubrics data and the summary in excel (or hard copy)
- Sample student works assignment or project
- C) Other documents
- Assessment reports
- OBE plan or Assessment plan
- Curriculum Map
- Minutes from meetings disseminating the assessment results and proposing curriculum action items, and progress on action items.

6. Outcome based Curriculum

An outcome based curriculum should consist of the following with regard to OBE:

- Mission of the school
- Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)
- Course Outcomes (COs) of each of the course
- Curriculum Mapping

7. The schools' path OBE

This section explains in brief how the individual school can go ahead with outcome-based education framework. The steps can be:

- a. Identify the key terms in Mission of the school and relate to vision, mission and graduate attributes of Thunchath Ezhuthachan Malayalam University, giving focus to students learning.
- b. Develop Programme Specific Outcomes for Masters and Doctoral programmes
- c. Prepare course outcomes (COs)
- d. Map COs to POs and PSOs i.e. Curriculum Map
- e. Finalise OBE based Curriculum
- f. Develop rubrics for outcomes
- g. OBE Plan (mentioning 6 steps of OBE)
- h. OBE coordinator can decide which courses will be taken for measurement in each year. At least two measurements for each of PSO for a batch before the start of the academic year
- i. Course information document for each course at the beginning of each semester.
- j. assessment report, which gives details about assessment results and action taken etc. at end of each academic year
- k. Conduct indirect assessment once in 2 years Alumni survey, Students survey and employers survey.

8. Appendix

Sample Curriculum Map and Assessment Schedule

Programme	Courses								
Outcome	Course1	Course 2	Course 2	Course 3	Course 4	Course 5	Course 6		
PO 1	X		X		X	X	X		
PO 2		X	X	X		X	X		
PO 3	X		X		X	X			
Assessment	EQ	EQ	EQ	EQ	AT	EQ	EQ		
Method			&AT						

EQ: Embedded Questions, AT: Assessment Tasks (field work, Lab Experiments, internship etc.)

Internal Assessment Sheet

Thunchath Ezhuthachan Malayalam University

Name of the School:

Semester No:

Name and Code Number of the Course:

Name of the Course Instructor:

Roll	Register	Name	Attendance	Test Paper/Field	Assignment/	Seminar	Total
------	----------	------	------------	------------------	-------------	---------	-------

No	No.	(5 Marks)	Report/Quiz (10	Term paper	(10	(30Marks)
			Marks)	(5 Marks)	Marks)	

Signature of Course Instructor

Signature of School Director

Assessment Rubrics (Sample)

PO 10:Ourgraduateswilldemonstrate anabilitytoengage inethicalreasoning

PO10-PSOs	3 – Exceeds Expectations	2-MeetsExpectations	1-BelowExpectations
PSO9:Definean ethical issue (understand)	Central issues are all identified and used as basisforethicalevaluation; other issues are identified	Central issues are identified,butnotclearly explained. Peripheral issues not identified.	Centralethicalissuesnot defined appropriately or completely. Misunderstanding of the issuesrelatedtothecase.
PSO 10: identify thespecificentities being affected by theethicaldilemma (understand)	Critical affected parties (both direct and indirect) are identified. Perspectives of all critical stakeholders are identified.	Major players are identified,butsomeminor players may be missing. Perspectives are not complete.	Affected parties are not identifiedcompletely. Major players critical to analysis are not identified. Perspectives of players are missing
PSO11:Articulate the consequences of each possible action (Evaluate)	All critical consequences are identified and connected with actions. Moreminorconsequences are also considered. Relative weights of the various consequences explicitly articulated with rational thought.	All critical consequences are identified, but some minor consequences are missed. Consequences arerelatedtoactions,but relative weights are not clearly articulated or inappropriate.	Criticalconsequences of actions are missing. Actions are not connected withconsequences, but are instead random and illogical. Relative weights of actions and consequences are not identified.

Sample Assessment Results for Development Studies 2023

Core/El ective	Course Code	Course Title	Number of students	Exceeds Expectations	Meets Expectations	Below Expectations
Core	MUCC10 01	Knowledge Status of Malayalam language	17	20	60	20
Core	MUDS C 7102	Introduction to Social Science	17	18	62	20
Core	MUDS C7103	Introduction to development studies	17	21	60	19

Core	MUDS C7104	Making of modern Kerala	17	19	61	20
Core	MU DS C7105	Social Research methodology	17	20	60	20

Sample Course outcome, course syllabus and course tagging :MUES 6105 Sustainable Development: Theory and Practice (4 CREDITS) COURSE OUTCOME:

On successful completion of this course the students will be able to

- CO1. Understand the basic concepts of sustainable development.
- CO2. Discuss the existing policies and framework for achieving sustainable development.
- CO3. Explain the evolution and current trends of resource utilization in the industrial and energy sector.
- CO4. Evaluate sustainable development opportunities for cities, life styles, societies and cultures.
- CO5. Appraise the Kerala Development Model in the context of Sustainable Development.
- CO6. Consider suitable sustainable development opportunities in the Kerala scenario

COURSE CONTENT: (Syllabus)

Unit 1

Principles of Sustainable Development: Sustainable Development - Background and Definition, Social, Economic and Environmental Objectives of Sustainable Development. Sustainable urban vision for poverty alleviation and equality, ecological correlation and sustainability.

Unit 2

Policies and governance for sustainability: Global Initiative, Millennium Development Goals, Sustainable Development Goals, Economic Restructuring for Sustainable Development, National and State level Greening Initiatives, Redefining GDP, Imposition of Environmental Taxation, Decentralization and Sustainable Development

Unit 3

Transformation in the industrial and energy sector: Product sustainability, resource efficiency, recycling, internal treatment of waste and reduction of industrial emissions. Closed loop production methods, corporate ethics and Three-tier concept (economy, environment, society), changes and challenges to sustainable energy, and alternative energy systems.

Unit 4

Cities, Community, Politics: Social, Cultural Lifestyle Sustainability: Redesigning cities into eco-friendly cities, Decentralization of urban development activities for building small cities, marginalized people and sustainable development, development: gender inequality, indigenous cultures: sustainability lessons, lifestyle changes - alternative health care.

Unit 5

Sustainable Development of Kerala: Primary Areas and Sustainability, Western Ghats, Biodiversity Conservation, Renovation of Watershed (Wetlands, Rivers), Revival of Agriculture, Sustainable Fisheries development Policy, Wastelands, How Sustainable is the Kerala Development Model - studies on alternate development plan, A sustainable energy project for Kerala: Consultation ahead of 2050, A Green Transport for Kerala: Future Transportation Integrated Sustainable Tourism, Creation of Green Job opportunities in Kerala, Sustainable Decisions for Housing Problems in Kerala, Alternative Construction Procedures, Waste Management Problems and Solutions, IT Industry and Sustainable Development.

References

Ajayakumar, S., 2004, Water Controversy: Vicharam, Vivekam, Kottayam, DC Books

Kunhikannan, T.P. 2014, Gadgil Report and Kerala Development, Kozhikode, Mathrubhumi Books

Gopalan UK, 1991, Kayalnammutsampath, Kerala Language Institute, Thiruvananthapuram Nelson Velliman, 2013. Ashtamudikayalum Sasthamkotta thadakavum, Kerala Language Institute, Thiruvananthapuram

Prasad MK & Harishvasudevan 2013, Western Ghats: Gadgil - Kasthuri Rangan Reports and Reality, Kottayam DCBooks

Mohan, Manila C. (Eds.). 014. Madhavgadgil and Conservation of the Western Ghats, Mathrubhumi Books

Sreedharan, K. 2013, Environment and Development- Kerala Lessons, Kerala Language Institute, Thiruvananthapuram

Clayton, Tony and Nicholas, J. Radcliffe, 1996, Sustainability: A Systems Approach, London: Earthscan Ltd. Blewitt, John, 2008, Understanding Sustainable Development, London: Earthscan.

Braungart, Michael & William McDonough, 2002, Cradle to Cradle: Remaking the Way We Make Things, North Point Press.

Brown, Lester. R., 2009, Plan B. 4.0: Mobilizing to save Civilization, London: W.W. Norton & Company.

Brown, Lester, R., 2002, Eco-Economy: Building an Economy for the Earth, Hyderabad: Orient Longman.

Hopkins, Rob, 2008, The Transition Handbook, Devon (UK): Green BooksLtd.

Kirkby, John Phil, 2003, O'Keefe and Lloyd Timberlake (Eds.), The Earthscan Reader in Sustainable Development, London: Earthscan.

Meadows, Donella, H., 2009, Thinking in Systems: A Primer, London: Earthscan.

Millenium Ecosystem Assessment, 2005, Ecosystems and Human Well Being: Synthesis, Island Press.

Mohanty, Nilmadhab et al., 2012, Sustainable Development: Emerging Issues inIndia's Mineral sector, Research Study Sponsored by Planning Commision, Govt of India, New Delhi and executed by ISID.

Roberts, Jane, 2004, Environmental Policy, London: Routledge.

Smith, Mark, J. (Editors), 1999, Thinking Through the Environment: A Reader,

London: Routledge.

Soubbotina Tatyana, P., Beyond Economic Growth: An Introduction to Sustainable Development, Washington D.C: The World Bank. (Available on the website)

Steffen, Alex (Ed), 2006, Worldchanging: A User's Guide for the 21st Century, New York: Harry N. Abrams Inc.

The World Watch Institute, 2014, State of the World 2014, Governing For Sustainability, Washington: Island Press.

The World Watch Institute, 2013, Is Sustainability Still Possible (State of the World 2013 Report), Washington: Island Press.

United Nations, 2013, Agenda 21: Earth Summit: The United Nations Programme of Action from Rio, Create Space Independent Publishing Platform.

Weizsacker, Ernst Von et al., 2009, Factor Five: Transforming the Global Economy through 80% improvements in Resource Productivity, London: Earthscan.

World Commission on Environment and Development, 1987, Our Common Future, Delhi: Oxford University Press.

Yeang, Ken, 1995, Designing With Nature: The Ecological Basis for Architectural Design, Mcgraw-Hill Inc.

SAMPLE COURSE TAGGING: MUES 6105 Sustainable Development: Theory and Practice (4 CREDITS)

СО	COURSE OUTCOME	PO	PSO	CL	KC	THEORY HOURS	PRACTICAL/ LAB/FIELD HOURS
CO1	Understand the basic concepts of sustainable development	PO 2	PSO 2	Un	Co	10	0
CO2	Discuss the existing policies and framework for achieving sustainable development	PO 2, PO 3	PSO 1	Un	Pr	15	0
CO3	Explain the evolution and current trends of resource utilization in the industrial and energy sector	PO 2	PSO 1	An	Pr	10	0
CO4	Evaluate sustainable development opportunities for cities, life styles, societies and cultures	PO 3	PSO 2	Ev	Pr	15	0
CO5	Appraise the Kerala Development Model in the context of Sustainable Development	PO 3	PSO 2, PSO 3	Ev	Pr	10	0
CO6	Consider suitable sustainable development opportunities in the Kerala scenario	PO 2, PO 3	PSO 2	Ev	Pr	12	0

TERN	MINOLOGIES USED
CO	Course Outcome
PO	Programme Outcome
PSO	Programme Specific Outcome
CL	Cognitive Level
Re	Remember
Un	Understand
Ap	Apply
An	Analyse
Ev	Evaluate
Cr	Create
KC	Knowledge Category
Fa	Factual
Co	Conceptual
Pr	Procedural
Me	Metacognitive

Indirect Assessment •

Based on Alumni Survey. The main objective of this question is to assess the perception and experience of students about their overall skill development during their program. The results of the study are shown below. All values are in 5-point scale

Skills	Development during MA Film Studies Programme	Importance of this skill in the industry
Communicating effectively	3.57	3.62
Presenting technical and non-technicalinformation	3.31	3.25
Writing skill (e.g. proposal, reports, articles)	3.20	3.37
Problem solving	3.31	3.46
Incorporating ethical considerations into decisions	3.45	3.40
Being flexible and adaptable, responsive to change	3.50	3.55
Critical thinking	3.36	3.53
Big picture and System thinking	3.19	3.34

Student engagement survey results

Skill/Ability	% of students
Okin/Admity	/0 of students

	Very little	Some	Quite a bit	Very much
Acquiring a broad general education	2.9	20.3	39.5	37.2
Acquiring job related knowledge and skills	2.3	18.0	45.3	34.3
Writing clearly and effectively	3.5	16.9	43.0	36.6
Speaking clearly and effectively	2.3	15.7	43.6	38.4
Thinking critically and analytically	2.3	16.3	45.9	35.5
Developing a global perspective	2.3	18.6	40.1	39.0
Developing a deep sense of social responsibility	1.7	12.2	46.5	39.5
Demonstrating leadership qualities	2.9	19.8	39.0	38.4
Using computing and information technology	1.2	15.1	51.2	32.6
Working effectively with others	1.7	16.9	41.9	39.5
Learning effectively on your own	1.7	12.8	46.5	39.0
Understanding yourself	3.5	15.1	38.4	43.0
Understanding people of other racial and ethnic backgrounds	2.3	15.7	45.3	36.6

Solving complex, real-world problems	1.2	19.2	40.1	39.5
Developing a personal code of values and ethics	2.3	15.1	46.5	36.0
Contributing to the welfare of your community	3.5	14.5	42.4	39.5
Securing relevant work after graduation	1.7	12.2	46.5	39.5
Problem solving	1.2	15.1	51.2	32.6

In general, the majority of students are of the opinion that they are being trained on the above mentioned skills.

• Blooms Taxonomy related

Students Feedback based on Blooms Taxonomy

Intellectual activity	% of students			
	Very little	Some	Quite a bit	Very Much
Memorising facts, ideas or methods from your subjects and readings	1.7	22.1	47.1	29.1
Analysing the basic elements of an idea, experience or theory, such as examining a particular case or situation in depth and considering its components	0	28.5	41.9	29.7
Applying theories or concepts to practical problems or in new situations	0.6	23.3	48.3	27.9
Synthesising and organising ideas into new, more complex interpretations and relationships	0.6	28.5	45.3	25.6
Making judgements about the value of information, arguments or methods, such as examining how others gather and interpret data and assessing the soundness of their conclusions	0	23.8	48.8	27.3