



MAHATMA GANDHI UNIVERSITY, KERALA

Abstract

MGU-UGP/BBA/BCA (Honours) - OBE - ATTAINMENT MANUAL - PART - I - Approved - Orders Issued.

ACA 16

No. 1317/ACA 16/2025/MGU

Priyadarsini Hills, Dated: 07.02.2025

*Read:-*1. Recommendations of the various committees constituted for the smooth functioning of Honours Undergraduate Programmes.

2. Orders of the Vice Chancellor under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, dated. 05.02.2025.

ORDER

The various committees constituted for the smooth functioning of Honours Undergraduate Programmes, after detailed deliberations, submitted recommendations, vide paper read as (1) above, to approve the MGU-UGP/BBA/BCA (Honours) OBE - ATTAINMENT MANUAL PART - I, which offers a detailed framework for evaluating and ensuring the achievement of Programme Outcomes (POs) and Course Outcomes (COs) in the context of Outcome-Based Education (OBE). (OBE - ATTAINMENT MANUAL PART - I, is attached as annexure.)

Considering the emergency, sanction has been accorded by the Vice Chancellor, in exercise of the powers of the Academic Council vested upon him under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, vide paper read as (2), to approve the above recommendations.

Orders are issued accordingly.

SHAJI K G

ASSISTANT REGISTRAR III
(ACADEMIC)
For REGISTRAR

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Section Officer



MAHATMA GANDHI UNIVERSITY, KOTTAYAM
MGU-UGP/BBA/BCA(HONOURS)
OBE-ATTAINMENT MANUAL
PART - I

Mahatma Gandhi University
Priyadarshini Hills
Kottayam-686560
Kerala, India

INTRODUCTION

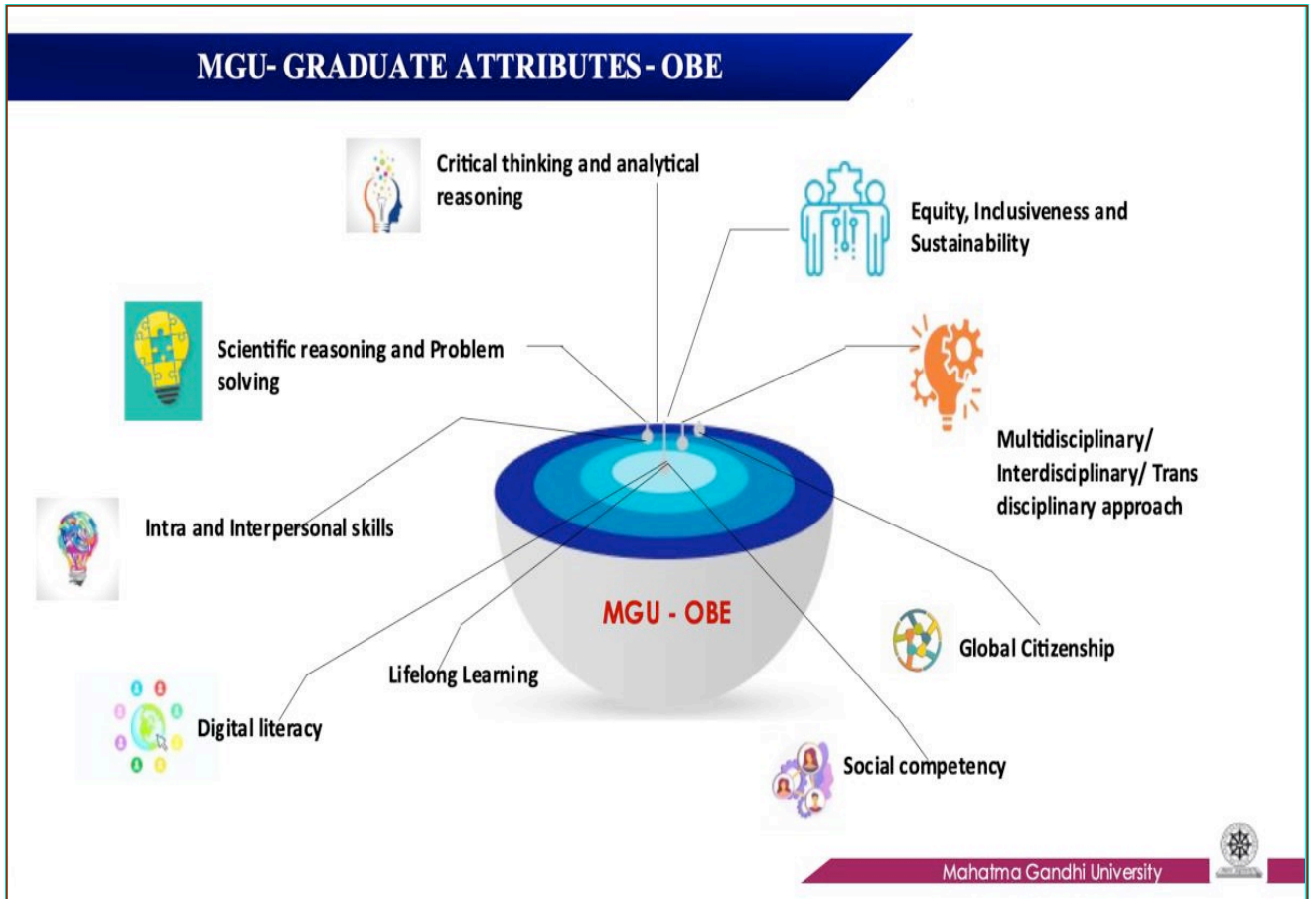
The OBE-Attainment Manual offers a detailed framework for evaluating and ensuring the achievement of Programme Outcomes (POs) and Course Outcomes (COs) in the context of Outcome-Based Education (OBE). This document outlines the processes, guidelines, and methodologies used to assess these outcomes, incorporating both Continuous Comprehensive Assessment (CCA) and End-Semester Evaluations (ESE). By establishing clear criteria for measurement and assessment, the manual aims to standardize the tracking of academic progress, ensuring that students successfully meet the intended learning objectives across their academic programs.

Specifically designed for the MGU-UGP, MGU-BBA, and MGU-BCA honours programs for students admitted in 2024 and onwards, this manual supports faculty, staff, and administrators in the effective implementation of OBE practices. It fosters a results-driven educational environment that aligns with institutional goals and global academic standards. In today's evolving educational landscape, the Outcome-Based Education approach represents a transformative shift from traditional teaching methods to a more comprehensive, student-centered model. This OBE-Attainment Manual acts as a definitive guide, providing institutions with a structured, systematic approach to measuring, analyzing, and improving student learning outcomes.

GRADUATE ATTRIBUTES (GAs)

The National Higher Education Qualifications Framework (NHEQF) envisages that students must possess the quality and characteristics of the graduate of a programme of study, including learning outcomes relating to the disciplinary area(s) in the chosen field(s) of learning and generic learning outcomes that are expected to be acquired by a graduate on completion of the programme(s) of study.

Graduate attributes are fostered through meaningful learning experiences made available through the curriculum and learning experience, the total college/university experience, and a process of critical and reflective thinking. The Graduate Attributes designed by the competent authorities of the Mahatma Gandhi University for MGU-UGP(Honours), MGU-BBA(Honours), and MGU-BCA(Honours), 2024 admissions are



GA 1 : Critical thinking and analytical reasoning

Capability to analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories to develop knowledge and understanding; critical sensibility to lived experiences, with self awareness and reflexivity of both self and society.

GA 2 : Scientific reasoning and problem solving

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; capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

GA 3: Multidisciplinary/ interdisciplinary/ transdisciplinary approach

Acquire interdisciplinary/ multidisciplinary/ transdisciplinary knowledge base as a consequence of the learning they engage with their programme of study; develop a collaborative-multidisciplinary/ interdisciplinary/ transdisciplinary- approach for formulate constructive arguments and rational analysis for achieving common goals and objectives.

GA 4: Intra and interpersonal skills

Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team; lead the team to guide people to the right destination, in a smooth and efficient way.

GA 5: Digital literacy

Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

GA 6: Global citizenship

Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

GA 7: Social competency

Ability to contemplate of the impact of research findings on conventional practices, and a clear understanding of responsibility towards societal needs and reaching the targets for attaining inclusive and sustainable development.

GA 8: Equity, inclusiveness and sustainability

Appreciate equity, inclusiveness and sustainability and diversity; acquire ethical and moral reasoning and values of unity, secularism and national integration to enable to act as dignified citizens; able to understand and appreciate diversity (caste, ethnicity, gender and marginalization), managing diversity and use of an inclusive approach to the extent possible.

GA 9: Lifelong learning

Ability to acquire knowledge and skills, including “learning how to learn”, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.

PROGRAMME OUTCOMES, COURSE OUTCOMES, AND CO-PO ARTICULATION MATRIX

The outcomes and attributes described in qualification descriptors mentioned in the NHEQF are achieved by students through learning acquired upon completing a programme of study. The term ‘programme’ refers to the comprehensive scheme of study undertaken by learners that leads to a qualification. Individual programmes of study will have specific learning outcomes that must be achieved for the award of a degree.

Programme Outcomes (POs)

Programme Outcomes (POs) are statements that describe what a learner graduating from general Programmes should be able to do or will know. The Programme Outcomes designed by the competent authorities of the Mahatma Gandhi University for MGU-UGP(Honours), MGU-BBA(Honours), and MGU-BCA(Honours), 2024 admissions are

PO 1 : Critical thinking and analytical reasoning

Capability to analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories to develop knowledge and understanding; critical sensibility to lived experiences, with self awareness and reflexivity of both self and society.

PO 2 : Scientific reasoning and problem solving

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; capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Multidisciplinary/ interdisciplinary/ transdisciplinary approach

Acquire interdisciplinary/ multidisciplinary/ transdisciplinary knowledge base as a consequence of the learning they engage with their programme of study; develop a collaborative-multidisciplinary/ interdisciplinary/ transdisciplinary- approach for formulate constructive arguments and rational analysis for achieving common goals and objectives.

PO 4: Communication skills

Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.

PO 5: Leadership skills

Ability to work effectively and lead respectfully with diverse teams; setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 6: Social consciousness and responsibility

Ability to contemplate of the impact of research findings on conventional practices, and a clear understanding of responsibility towards societal needs and reaching the targets for attaining inclusive and sustainable development.

PO 7: Equity, inclusiveness and sustainability

Appreciate equity, inclusiveness and sustainability and diversity; acquire ethical and moral reasoning and values of unity, secularism and national integration to enable to act as dignified citizens; able to understand and appreciate diversity (caste, ethnicity, gender and marginalization), managing diversity and use of an inclusive approach to the extent possible.

PO 8: Moral and ethical reasoning

Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior.

PO 9: Networking and collaboration

Acquire skills to be able to collaborate and network with educational institutions, research organisations and industrial units in India and abroad.

PO 10: Lifelong learning

Ability to acquire knowledge and skills, including “learning how to learn”, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.

Course Outcomes (COs)

Course Outcomes (COs) are statements that specify what a learner will know or be able to do after the successful completion of a course. Writing effective **Course Outcomes** is crucial in Outcome-Based Education, as they serve as clear indicators of what students are expected to learn and achieve upon completing a course. The course outcomes for each course will be developed by the Board of Studies or Expert Committees for the concerned or related subject and subsequently approved by the University's Academic Council. For Signature Courses designed by faculty members of affiliating colleges, the course outcomes will also be developed by them and submitted to the University for approval. These outcomes will be reviewed and recommended by the Board of Studies or Expert Committees for the relevant subject and subsequently approved by the University's Academic Council.

Below are the **key aspects to be followed** while formulating COs:

COs should align with the broader **Program Outcomes** defined by the curriculum committee of the Mahatma Gandhi University. Each CO should map to one or more relevant POs. COs

should be framed using measurable and observable **action verbs** based on the cognitive, affective, or psychomotor domains. While writing the COs try to stick with the keyword SMART (Smart, Measurable, Achievable, Relevant, and Timely). Align each COs with different levels in the learning domains cognitive, affective, or psychomotor domains. The different levels in the Cognitive domain are: Remember, Understand, Apply, Analyze, Evaluate, and Create. In the Affective domain, the levels are Interest and Appreciation. The level in the Psychomotor domain is Skill. For a 3 or 4 credit course, the number of Course Outcomes should ideally be between 4 and 8. May follow a consistent structure for all CO statement "At the end of this course, students will be able to [action verb] [specific skill or knowledge]. If a course has 3-5 modules, merge related concepts into one CO per module. Ensure that all the syllabus content for a course are mapped to respective and relevant course outcomes and in vice versa.

CO-PO Articulation Matrix

The **CO-PO Articulation Matrix** gives the information about the relationship between Course Outcomes and Programme Outcomes. The mapping of PO and CO correlates whether the Course Outcomes match with Programme Outcomes which finally reflects the success of the programme. '0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

Sample of a CO-PO Articulation Matrix

Course: Mathematics for Competitive Examinations										
Course Code: MG1MDCMAT100										
CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	3	0	0	0	0	0	0	0	2
CO 2	3	3	1	1	0	0	0	0	0	2
CO 3	3	3	2	0	0	0	0	0	0	2
CO 4	3	3	1	0	0	0	0	0	0	2
PO Mapping Value of the Course	2.75	3.00	1.33	1.00	0	0	0	0	0	2.00

Normalization of the CO-PO articulation matrix is a critical process to ensure fairness, consistency, and transparency in evaluating how individual courses contribute to program outcomes. If the PO-CO weight contributions are uneven or inconsistent across POs, normalization may be necessary to ensure that the relative contributions remain proportional and balanced. We can divide each weight by the sum of all weights for that particular PO. This Normalized CO-PO Articulation Matrix is for the purpose of PO Attainment Calculation.

Sample of a Normalized CO-PO Articulation Matrix

Course: Mathematics for Competitive Examinations										
Course Code: MG1MDCMAT100										
CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	0.18	0.25	0	0	0	0	0	0	0	0.25
CO 2	0.27	0.25	0.25	1.00	0	0	0	0	0	0.25
CO 3	0.27	0.25	0.50	0	0	0	0	0	0	0.25
CO 4	0.27	0.25	0.25	0	0	0	0	0	0	0.25

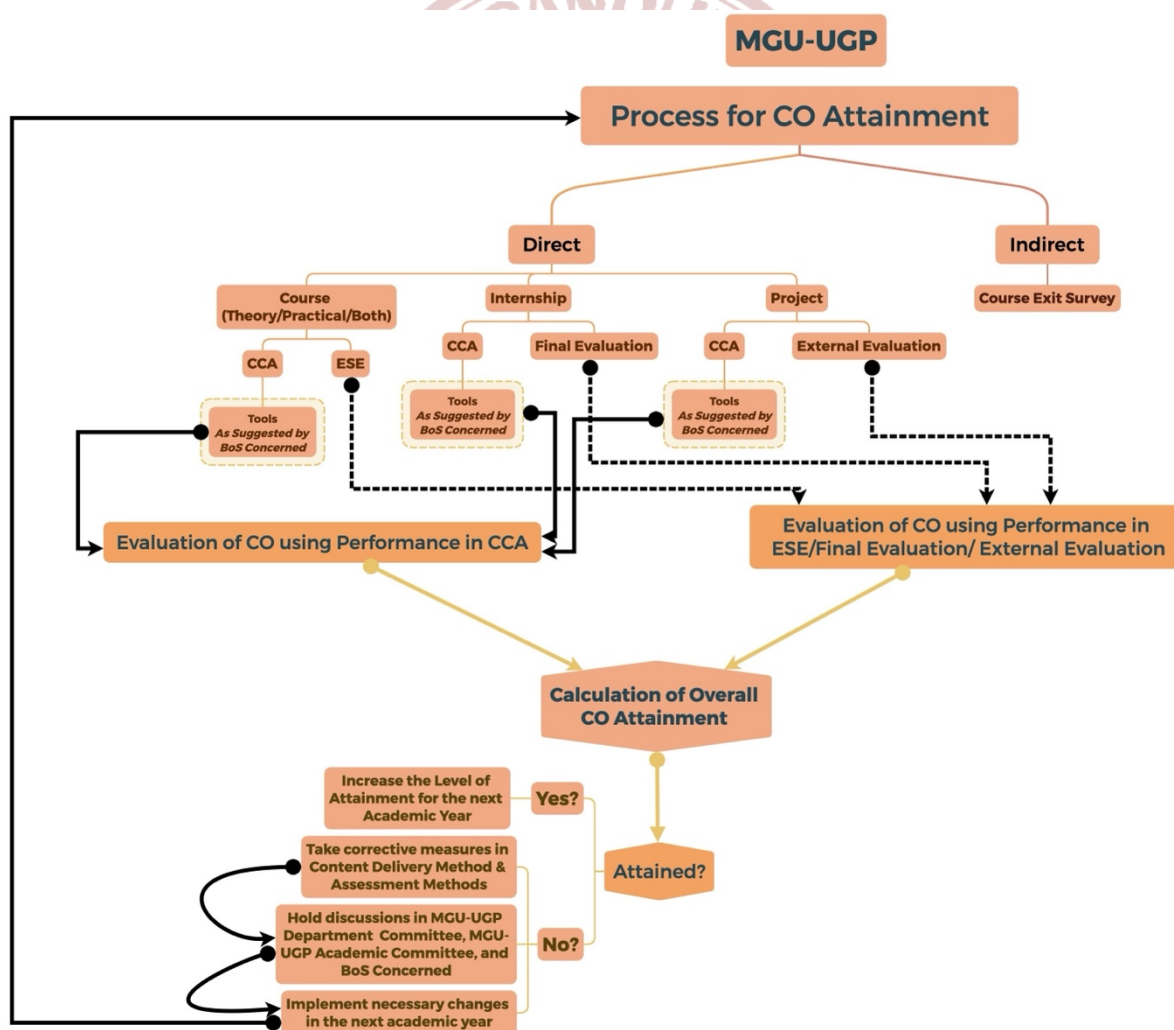
OBE ATTAINMENT MANUAL

CO ATTAINMENT

ASSESSMENT OF COURSE OUTCOMES

- The assessment takes place at the course level only.
- CO Attainment can be calculated both for individual students and for individual courses.
- CO Attainment (Course-wise) can be calculated both at the College Level and at the University Level.

PROCESS FOR CO ATTAINMENT



The CO Indirect Attainment is not considered at the University Level. The Colleges may calculate the same at the College Level using Course Exit Survey.

Direct and Indirect: Weightage for Calculating the Overall CO Attainment

Direct	90%
Indirect	10%

If a CO is not evaluated through either direct or indirect processes, its attainment will be determined solely based on the available assessment methods.

CO ATTAINMENT LEVELS FOR A STUDENT

CO Attainment Levels for CCA (Refer Equation 1)

1	If the student scores between 0 and < 40% Marks (For MGU-UGP) If the student scores between 0 and < 45% Marks (For MGU-BBA & MGU-BCA)
2	If the student scores between 40% ≥ and < 80% Marks (For MGU-UGP) If the student scores between 45% ≥ and < 85% Marks (For MGU-BBA & MGU-BCA)
3	If the student scores ≥ 80% Marks (For MGU-UGP) If the student scores ≥ 85% Marks (For MGU-BBA & MGU-BCA)

CO Attainment Levels for ESE/Final Evaluation/External Evaluation

(Refer Equation 1)

1	If the student scores between 0 and < 30% Marks (For MGU-UGP) If the student scores between 0 and < 35% Marks (For MGU-BBA & MGU-BCA)
2	If the student scores between 30% ≥ and < 70% Marks (For MGU-UGP) If the student scores between 35% ≥ and < 75% Marks (For MGU-BBA & MGU-BCA)
3	If the student scores ≥ 70% Marks (For MGU-UGP) If the student scores ≥ 75% Marks (For MGU-BBA & MGU-BCA)

Weightage for Calculating the Overall CO Attainment

CCA	30%
ESE/Final Evaluation/External Evaluation	70%

Overall CO Attainment Levels (Refer Equation 2)

1	If the student scores between 0 and < 35% Marks (For MGU-UGP) If the student scores between 0 and < 40% Marks (For MGU-BBA & MGU-BCA)
2	If the student scores between 35% ≥ and < 75% Marks (For MGU-UGP) If the student scores between 40% ≥ and < 80% Marks (For MGU-BBA & MGU-BCA)

3	If the student scores $\geq 75\%$ Marks (For MGU-UGP) If the student scores $\geq 80\%$ Marks (For MGU-BBA & MGU-BCA)
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CO ATTAINMENT LEVELS FOR A COURSE

CO Attainment Levels for CCA (Refer Equation 3)

1	$< 60\%$ of the students scores $\geq 60\%$ Marks (For MGU-UGP) $< 60\%$ of the students scores $\geq 65\%$ Marks (For MGU-BBA & MGU-BCA)
2	$\geq 60\%$ & $< 80\%$ of the students scores $\geq 60\%$ Marks (For MGU-UGP) $\geq 60\%$ & $< 80\%$ of the students scores $\geq 65\%$ Marks (For MGU-BBA & MGU-BCA)
3	$\geq 80\%$ of the students scores $\geq 60\%$ Marks (For MGU-UGP) $\geq 80\%$ of the students scores $\geq 65\%$ Marks (For MGU-BBA & MGU-BCA)

CO Attainment Levels for ESE/Final Evaluation/External Evaluation

(Refer Equation 3)

1	$< 60\%$ of the students scores $\geq 50\%$ Marks (For MGU-UGP) $< 60\%$ of the students scores $\geq 55\%$ Marks (For MGU-BBA & MGU-BCA)
2	$\geq 60\%$ & $< 80\%$ of the students scores $\geq 50\%$ Marks (For MGU-UGP) $\geq 60\%$ & $< 80\%$ of the students scores $\geq 55\%$ Marks (For MGU-BBA & MGU-BCA)
3	$\geq 80\%$ of the students scores $\geq 50\%$ Marks (For MGU-UGP) $\geq 80\%$ of the students scores $\geq 55\%$ Marks (For MGU-BBA & MGU-BCA)

Weightage for Calculating the Overall CO Attainment

CCA	30%
ESE/Final Evaluation/External Evaluation	70%

Overall CO Attainment Levels (Refer Equation 4)

1	$< 60\%$ of the students scores $\geq 55\%$ Marks (For MGU-UGP) $< 60\%$ of the students scores $\geq 60\%$ Marks (For MGU-BBA & MGU-BCA)
2	$\geq 60\%$ & $< 80\%$ of the students scores $\geq 55\%$ Marks (For MGU-UGP) $\geq 60\%$ & $< 80\%$ of the students scores $\geq 60\%$ Marks (For MGU-BBA & MGU-BCA)
3	$\geq 80\%$ of the students scores $\geq 55\%$ Marks (For MGU-UGP) $\geq 80\%$ of the students scores $\geq 60\%$ Marks (For MGU-BBA & MGU-BCA)

CO ATTAINMENT CALCULATION

The following formula can be used to calculate the Course Outcome Attainment of a student{y} in CO{x} in terms of percentage:

$$CO\{x\} \text{ in } \% = \frac{\text{Marks obtained by student}\{y\} \text{ in } CO\{x\}}{\text{Maximum Marks allotted to } CO\{x\}} \times 100, \dots\dots\dots (Equation 1)$$

where $x = 1, 2, \dots, n$; n : number of Course Outcomes and $y = 1, 2, \dots, m$; m : number of students attended the evaluation for the course to which this CO{x} belongs.

This should be separately calculated for CCA and ESE/Final Evaluation/External Evaluation.

The following formula can be used to calculate the Overall Course Outcome Attainment of a student{y} in CO{x} in terms of percentage:

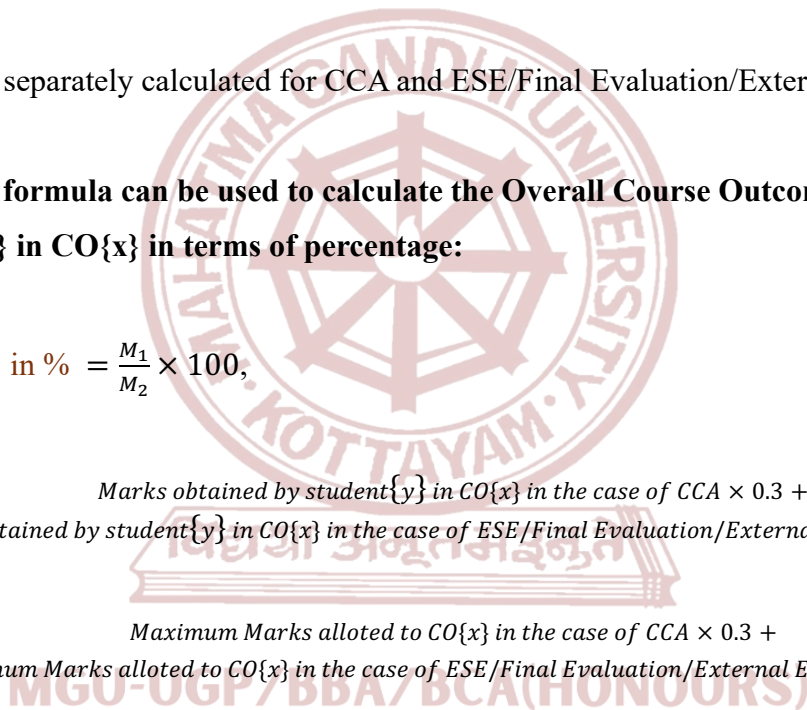
$$\text{Overall } CO\{x\} \text{ in } \% = \frac{M_1}{M_2} \times 100,$$

where

$$M_1 = \text{Marks obtained by student}\{y\} \text{ in } CO\{x\} \text{ in the case of CCA} \times 0.3 + \text{Marks obtained by student}\{y\} \text{ in } CO\{x\} \text{ in the case of ESE/Final Evaluation/External Evaluation} \times 0.7$$

and

$$M_2 = \text{Maximum Marks allotted to } CO\{x\} \text{ in the case of CCA} \times 0.3 + \text{Maximum Marks allotted to } CO\{x\} \text{ in the case of ESE/Final Evaluation/External Evaluation} \times 0.7$$



OBE ATTAINMENT MANUAL (Equation 2)

If, for any reason, the CO{x} is not evaluated in ESE/Final Evaluation/External Evaluation, the Overall CO attainment will be based solely on the CCA.

The following formula can be used to calculate the Course Outcome Attainment of all the students in CO{x} in terms of percentage: (CO{x} Attainment – Course-wise)

$$CO\{x\} \text{ Attainment in } \% =$$

$$\frac{\text{Number of students who have scored } \geq K\% \text{ of marks in } CO\{x\}}{\text{Total number of students attended evaluation for the course to which } CO\{x\} \text{ belongs}} \times 100,$$

..... (Equation 3)

where $x = 1, 2, \dots, n$; n : number of Course Outcomes.

In the case of CO Attainment calculation for CCA,

$$K = \begin{cases} 60 & \text{for MGU – UGP} \\ 65 & \text{for MGU – BBA \& MGU – BCA} \end{cases}$$

In the case of CO Attainment calculation for ESE,

$$K = \begin{cases} 50 & \text{for MGU – UGP} \\ 55 & \text{for MGU – BBA \& MGU – BCA} \end{cases}$$

This should be separately calculated for CCA and ESE/Final Evaluation/External Evaluation.

The following formula can be used to calculate the Overall Course Outcome Attainment of all the students in CO{x} in terms of percentage: (Overall CO{x} Attainment – Course-wise)

Overall CO{x} Attainment in %

$$= \frac{\text{Number of students who have scored } \geq N\% \text{ of marks in CO}\{x\}}{\text{Total number of students attended evaluation for the course to which CO}\{x\} \text{ belongs}} \times 100,$$

where

$$N = \begin{cases} 55 & \text{for MGU – UGP} \\ 60 & \text{for MGU – BBA \& MGU – BCA} \end{cases}$$

MGU-UGP/BBA/BCA(HONOURS)

OBE ATTAINMENT MANUAL (Equation 4)

TARGET ATTAINMENT LEVEL

Target Attainment Level is now set to be 2 for all the Course Outcomes. This may be revised later.