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Guidelines for Evaluation of the Foundational Level Courses of the 1st Semester in the 4-year UG Honours Programs w.e.f 2023-24

1. Background:

Commencing in the academic year 2023-24, a 4-year undergraduate (UG) Honors Program, is launched. This unique program encompasses both a Single Major and a Minor.

Within the first semester of this 4-year UG program, two fundamental courses have been designed. These courses fall into four distinct categories: one category is consistent across all arts and social sciences majors, another is tailored for commerce and business administration majors, a third category is designed for biological sciences majors, and the fourth category is intended for students majoring in mathematics, statistics, physical sciences, chemical sciences, and computer science.

It's important to note that these courses are foundational in nature.

2. Objectives of designing the first two courses:

The courses in the first semester of graduate programs serve various objectives, with the primary goal of providing students with the necessary skills, knowledge, and preparation to succeed in their chosen field of study. The specific objectives of introducing pathway courses include:

1. Prepare Students for Advanced Study in a Major or for choosing a Minor:
One of the primary objectives is to prepare students for the rigor of advanced graduate-level coursework by bridging any knowledge or skill gaps they may have. The courses shall also help the students in choosing a particular Minor of his/her interest.

2. Ensure a Strong Foundation:
Help students build a strong foundational understanding of the core concepts and principles in their field, ensuring that they have the necessary background to succeed in more specialized courses.

3. Address Diverse Backgrounds:
Accommodate students with diverse academic backgrounds and experiences, allowing them to come up to speed regardless of their prior education.

4. Promote Interdisciplinary Understanding:
Encourage a holistic understanding of the subject matter, especially in understanding the multidisciplinary or interdisciplinary nature of the chosen domain of study, by covering a broad range of topics and perspectives.

5. Foster a Growth Mindset:
Instill a growth mindset and a commitment to lifelong learning, encouraging students to understand and adapt to new challenges and opportunities in their field.

6. Ensure Compliance with Program Requirements:
Ensure that students meet the minimum requirements for admission into the graduate program, especially in cases where students may lack prerequisites for their desired program.

7. Enhance Retention and Graduation Rates:
Improve retention and graduation rates by giving students the tools they need to succeed, reducing attrition due to unpreparedness.

8. Customize Learning Experiences:
Allow students to choose their minor and online courses to align with their individual needs and career goals, ensuring a more personalized educational experience.

9. Provide Transitional Support:
Offer academic and transitional support services to help students acclimate to the demands of graduate-level education.

Thus, these courses are designed to support students' academic and professional development, ensuring they are well-equipped to excel in their chosen graduate programs and make meaningful contributions to their respective fields.

3. **List of courses designed –**

For Arts and Social Sciences:

1. Fundamentals of Social Sciences
2. Perspectives on Indian Society

For Commerce/Business Administration:

1. Fundamentals of Commerce
2. Business Organization

For Biological Sciences

1. Introduction to Classical Biology
2. Introduction to Applied Biology

For Mathematics/Physical/Chemical/Computer Sciences:

1. Essentials and Applications of Mathematical, Physical and Chemical Sciences
2. Advances in Mathematical, Physical, and Chemical Sciences.

Universities are also given the freedom to devise such types of courses wherever necessary, meeting the stated objectives.

4. **Evaluation Methodology:**

As these courses have been structured with distinct and individualized goals, there is a recognized need for a standardized evaluation approach. Consequently, it is suggested that the assessment of these courses will adopt an objective format, encompassing multiple choice questions, completion exercises, matching exercises, concise one-word responses, and succinct one-sentence responses.

5. **Objective Format of Evaluation**

The main aims of having an objective format in the evaluation methodology of these courses which are at the foundation level are -

1. Consistency and Fairness: Objective formats, such as multiple-choice questions, provide a standardized and consistent method of assessment. This helps ensure that all students are evaluated based on the same criteria, promoting fairness in the evaluation process.

2. Efficiency: Objective assessments can be efficiently administered and graded, particularly in larger classes. This saves time and resources for both faculty and students.

3. Objective Measurement: Objective assessments offer a more objective and quantifiable measure of a student's knowledge and skills. The results are less susceptible to subjectivity or bias on the part of the grader.

4. Assessment of Diverse Learning Objectives: Objective formats can assess a wide range of learning objectives, from basic recall of facts (remembering) to more complex skills like analysis, application, and evaluation. This versatility makes them suitable for various courses and learning outcomes.

5. Alignment with Learning Objectives: Objective questions can be carefully aligned with specific learning objectives, ensuring that the assessment directly measures what students are expected to know and be able to do.

6. Reliability: Objective assessments tend to have higher reliability because they are less prone to subjective interpretation. Reliable assessments consistently measure a student's knowledge and skills.

7. Validity: Properly designed objective assessments are often considered to have high content validity because they can cover a broad range of content areas. They can also be designed to measure other forms of validity, such as construct or criterion-related validity.

8. Scalability: Objective formats are easily scalable to accommodate larger student populations, making them suitable for both small and large classes.

9. Data Analysis: Objective assessment results can be subject to quantitative data analysis, which can be valuable for program evaluation, improvement, and accreditation purposes.

10. Feedback for Course Improvement: By analyzing the results of objective assessments, instructors and institutions can identify areas where students may be struggling and make curriculum adjustments to improve student learning outcomes.

11. Assessment of Fundamental Concepts: Objective assessments are particularly effective for evaluating fundamental concepts that serve as a foundation for more advanced coursework.

6. Aligning the evaluation with Bloom's Taxonomy:

Bloom's Taxonomy of educational objectives is a framework that categorizes different levels of cognitive learning and thinking skills. The taxonomy includes six major levels, organized from the lowest order of thinking to the highest order:

Remembering:
At this level, learners demonstrate the ability to recall facts, information, or concepts from memory. This involves recognizing or recalling previously learned material.

Understanding:
At this level, learners grasp the meaning of information. They can explain ideas, concepts, or theories in their own words, demonstrating comprehension and interpretation.

Applying:
Applying refers to using knowledge or concepts in new situations or contexts. Learners demonstrate their ability to take what they've learned and apply it to solve problems or complete tasks.

Analyzing:
At this level, students break down information into its constituent parts and examine the relationships between those parts. They identify patterns, connections, and structures within the material.

Evaluating:
This level involves making judgments or assessments about the value or quality of ideas, theories, solutions, or products. Learners use criteria to make informed decisions and justify their opinions.

Creating:
Creating is the highest level of Bloom's Taxonomy. At this level, students generate new ideas, products, or solutions. They combine elements to form a coherent whole and use their creativity to produce something original.

These levels are hierarchical, with each level building upon the skills and knowledge developed at the previous level. Bloom's Taxonomy is widely used in education to develop learning objectives, design curricula, and create assessments that target specific levels of cognitive development. It helps educators ensure that their teaching and assessment methods align with the desired learning outcomes.

7. Designing an Objective Test Format:

Designing objective questions for evaluating these foundation courses involves creating questions that effectively assess students' understanding and knowledge of the fundamental concepts and skills taught in the course. Designing objective questions, including multiple-choice questions (MCQs), true or false questions, and fill-in-the-blank questions, by aligning them with the different levels of Bloom's Taxonomy is desirable. The focus shall be on -

1. Understanding the Learning Objectives:
Start by thoroughly understanding the learning objectives of the foundation course. These objectives should guide the question design.

2. Determining Question Types:
Decide on the types of objective questions that are to be included in the evaluation. Common types include MCQs, true or false questions, and fill-in-the-blank questions, matching, one-word or one-sentence responses.

3. Categorizing by Cognitive Level:
Categorizing the learning objectives and topics based on the cognitive levels of Bloom's Taxonomy, which include, Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating.

4. Balancing the Cognitive Levels:
A balanced distribution of questions across the cognitive levels, with a focus on assessing different levels of understanding needs to be ensured. This will help evaluate whether students have grasped the foundational knowledge and can apply it appropriately.

5. Writing MCQs:
- For Remembering: Creating MCQs that assess students' recall of basic facts and concepts.
- For Understanding: Designing MCQs that evaluate comprehension of principles or theories.
- For Applying: Formulating MCQs that challenge students to use their knowledge to solve problems or make decisions.
- For Analyzing, Evaluating, and Creating: These higher-order levels may be more challenging with MCQs, but still, questions can be framed that involve critical thinking. For instance, asking students to choose the best solution among options, evaluating the correctness of statements, or completing scenarios.

6. Writing True or False Questions:
True or false statements shall also align with the learning objectives. These questions are particularly suitable for assessing understanding and recalling factual information.

7. Writing Fill-in-the-Blank Questions:
Fill-in-the-blank questions shall be used to assess students' ability to complete sentences, definitions, or statements. These questions can be effective for testing knowledge recall.

8. Avoid Ambiguity:
It is to be ensured that all questions and statements are clear and free from ambiguity. Each question should have a single correct answer.

9. Balancing and Sequencing:
Distributing questions evenly throughout the evaluation and arranging them logically in terms of difficulty and cognitive levels needs to be ensured.

10. Grading Rubrics:
If applicable, provide grading rubrics for open-ended questions and clear guidelines on how to evaluate answers may be provided.

The process of creating objective questions to assess these foundational courses necessitates thoughtful reflection on the course's objectives and the cognitive levels that need to be appraised. It is essential to develop an efficient evaluation instrument that accurately gauges whether students have acquired the vital knowledge and competencies taught in these foundational courses.

8. Semester End Evaluation & Internal Assessment:

70 marks for Semester End Examination and 30 marks for Internal Assessment. Proportionate changes could be made if there is a change in the marks assigned for Semester End and Internal Assessments. The examination will have a maximum duration of 2 hours.

9. Question Paper Pattern:

QUESTION PAPER TAXONOMY										
Level of Bloom's Taxonomy	Type of Question & m Assigned									
	MCQs		FIB		VSQ		MC		T/F	
	CIA	SEE	CIA	SEE	CIA	SEE	CIA	SEE	CIA	SEE
Remembering	3 m	10 m								
Understanding	3 m	10 m								
Applying	4 m	10 m								
Analyzing					5 m	10 m				
Evaluating							5 m	10 m	5 m	10 m
Creating			5 m	10 m						

MCQs: Multiple Choice Questions 1 mark per question. 1.5 minutes to answer

FIB: Fill in the blanks. 1 mark for question. 1.5 minute to answer

VSQ: Very short answer questions. 1 mark per question. 1.5 minute to answer

MC: Matching. 5 marks for matching of 5 items. 2.5 minutes to answer

T/F: True or False. 1 mark per question. 1.5 minutes to answer
(m: marks; CIA: Continuous Internal Assessment; SEE: Semester End Examinations)

10. Each University shall prepare a Question Bank as per the Question Paper Taxonomy suggested above.

11. Universities shall prepare 4 series of Question Paper cum Answer Booklets marked A, B, C, and D with the questions jumbled, with equal weightage for all units of the syllabus.

12. The seating plan of the examination hall shall be prepared for students in multiples of 4 plus 2 or 8 plus 2 in a column as is done in the conduct of competitive examinations.

13. The question paper cum answer booklet shall bear the Register number of students and the question paper code (A or B or C or D) of that particular candidate.

14. For very short answer questions answers shall be given in one sentence and grading rubrics shall be provided for evaluation.

15. The key for the question paper series shall be provided and shall be in the custody of the Controller of Examinations.

16. It is desirable to conduct these examinations online.