AI & IMAGE PROCESSING LAB			
Course Code	**21AGL66**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	(0:0:2:0)	SEE Marks	50
Credits	01	Exam Hours	03

Course objectives:

- Implement and evaluate AI algorithms in Python programming language.
- Demonstrate the basic skills of image process
- Demonstrate the application development skills
- Design and develop the applications of images

Sl.NO	Experiments
1.	(a) Write a python program to print the multiplication table for the given number (b) Write a python program to check whether the given number is prime or not? (c) Write a python program to find factorial of the given number?
2.	(a) Write a python program to implement List operations (Nested List, Length, Concatenation, Membership, Iteration, Indexing and Slicing) (b) Write a python program to implement List methods (Add, Append, Extend & Delete).
3.	Write a python program to implement simple Chatbot with minimum 10 conversations
4.	Write a python program to Illustrate Different Set Operations
5.	(a)Write a python program to implement a function that counts the number of times a string(s1) occurs in another string(s2) (b)Write a program to illustrate dictionary operations([],in, traversal)and methods: keys(),values(),items()
6.	Implementation of the problem solving strategies: either using Forward Chaining or Backward Chaining (AI Problems to be implemented in Python)
7.	Implement any Game and demonstrate the Game playing strategies
8.	Write a Program to read a digital image. Split and display image into 4 quadrants, up, down, right and left
9.	Write a program to show rotation, scaling, and translation of an image.
10.	Read an image, first apply erosion to the image and then subtract the result from the original.
11.	Demonstrate the difference in the edge image if you use dilation instead of erosion.
12.	Read an image and extract and display low-level features such as edges, textures using filtering techniques
13.	Demonstrate enhancing and segmenting low contrast 2D images.

Course outcomes (Course Skill Set):

At the end of the course the student will be able to:

1. Implement and demonstrate AI algorithms.
2. Evaluate different algorithms.
3. Image Segmentation algorithm development
4. Image filtering in spatial and frequency domain.
5. Morphological operations in analysing image structures

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each course. The student has to secure not less than 35% (18 Marks out of 50) in the semester-end examination (SEE).

Continuous Internal Evaluation (CIE):

CIE marks for the practical course is **50 Marks**.

The split-up of CIE marks for record/ journal and test are in the ratio **60:40**.

- Each experiment to be evaluated for conduction with observation sheet and record write-up. Rubrics for the evaluation of the journal/write-up for hardware/software experiments designed by the faculty who is handling the laboratory session and is made known to students at the beginning of the practical session.
- Record should contain all the specified experiments in the syllabus and each experiment write-up will be evaluated for 10 marks.
- Total marks scored by the students are scaled downed to 30 marks (60% of maximum marks).
- Weightage to be given for neatness and submission of record/write-up on time.
- Department shall conduct 02 tests for 100 marks, the first test shall be conducted after the 8th week of the semester and the second test shall be conducted after the 14th week of the semester.
- In each test, test write-up, conduction of experiment, acceptable result, and procedural knowledge will carry a weightage of 60% and the rest 40% for viva-voce.
- The suitable rubrics can be designed to evaluate each student's performance and learning ability. Rubrics suggested in Annexure-II of Regulation book
- The average of 02 tests is scaled down to **20 marks** (40% of the maximum marks).

The Sum of scaled-down marks scored in the report write-up/journal and average marks of two tests is the total CIE marks scored by the student.

Semester End Evaluation (SEE):

SEE marks for the practical course is 50 Marks.

SEE shall be conducted jointly by the two examiners, ***one internal and another one is the external examiner from other institute***, examiners are appointed by the University

1. All laboratory experiments are to be included for practical examination.
2. (Rubrics) Breakup of marks and the instructions printed on the cover page of the answer script to be strictly adhered to by the examiners. **OR** based on the course requirement evaluation rubrics shall be decided jointly by examiners.
3. Students can pick one question (experiment) from the questions lot prepared by the internal /external examiners jointly.
4. Evaluation of test write-up/ conduction procedure and result/viva will be conducted jointly by examiners.
5. General rubrics suggested for SEE are mentioned here, writeup-20%, Conduction procedure and result in -60%, Viva-voce 20% of maximum marks. SEE for practical shall be evaluated for 100 marks and scored marks shall be scaled down to 50 marks (however, based on course type, rubrics shall be decided by the examiners)
6. Change of experiment is allowed only once and 15% Marks allotted to the procedure part to be made zero.

The duration of SEE is 03 hours

7. Rubrics suggested in Annexure-II of Regulation book.

Suggested Learning Resources:

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