ವಿಶ್ವೇಶ್ವರಯ್ಯತಾಂತ್ರಿಕವಿಶ್ವವಿದ್ಯಾಲಯ
ವಿಟಿಯುಅಧಿನಿಯಮ೧೯೯೪ರಅಡಿಯಲ್ಲಿಕರ್ನಾಟಕಸರ್ಕಾರದಿಂದಸ್ಥಾಪಿತವಾದರಾಜ್ಯವಿಶ್ವವಿದ್ಯಾಲಯ
VISVESVARAYA TECHNOLOGICAL UNIVERSITY
State University of Government of Karnataka Established as per the VTU Act, 1994"JnanaSangama" Belagavi-590018, Karnataka, India

Prof. B. E. Rangaswamy, Ph.D
REGISTRAR

Phone: (0831) 2498100
Fax: (0831) 2405467

REF: VTU/BGM/BAGL606/702/2024-25/ 5763

DATE: 11 FEB 2025

CIRCULAR

Subject: Publication of missing syllabus BAGL606- AI & Image Processing Lab of Agricultural Engineering Program regarding...

Reference: eMail from the Chairperson dated 08.02.2025

This is with reference to the subject cited above. The missing syllabus for BAGL606 – AI & Image Processing Laboratory (6th semester, Agricultural Engineering Program) has been submitted by the Chairperson, Board of Studies in Mechanical Engineering. The same has been published on the VTU web portal for stakeholders' reference.

A copy of the syllabus is enclosed with this circular. All Principals of affiliated/constituent Engineering Colleges, Chairpersons, and Program Coordinators of university departments are informed to circulate this information to all concerned.

Encl: Syllabus

11/02/25

REGISTRAR

To,

- The Principals of affiliated/constituent Engineering Colleges under the ambit of the university
- The Chairperson /Program Coordinator of the university department at Kalaburagi, Mysuru, Bengaluru and Belagavi

Copy to:

- The Registrar(Evaluation) VTU Belagavi for information and needful
- The Special Officer, QPDS VTU Belagavi for information and needful
- The Director, ITI SMU VTU Belagavi for information and to make arrangement to upload the syllabus on VTU web portal
- Office Copy

AI AND IMAGE PROCESSING LAB		Semester	6
Course Code	BAGL606	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	0:0:2:0	SEE Marks	50
Credits	01	Exam Hours	100
Examination nature (SEE)	Practical		

Course objectives:

- Implement and evaluate AI algorithms in python programming language.
- Demonstrate the application development skills.
- Demonstrate the basic skills of image process.
- 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?
2	Write a python program to implement simple Chatbot with minimum 10 conversations.
3	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 Python program that accepts a sentence and find the number of words, digits, uppercase letters and lowercase letters.
4	Write a python program to find factorial of the given number.
5	Write a python program to implement List methods(Add, Append, Extend and Delete)
6	Implement any Game and demonstrate the Game playing strategies.
7	Write a Program to read a digital image. Split and display image into 4 quadrants, up, down, right and left.
8	Write a program to show rotation, scaling, and translation on an image.
9	Read an image and extract and display low-level features such as edges, textures using filtering techniques.
10	Write a program to blur and smoothing an image.
11	Write a program to contour an image.
12	Write a program to detect a face/s in an image.

Course outcomes (Course Skill Set):

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

- Implement and demonstrate AI algorithms.
- Evaluate different algorithms.
- Image Segmentation algorithm development.
- Image filtering in spatial and frequency domain.
- 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 out of 50) and for the SEE minimum passing mark is 35% of the maximum marks (18 out of 50 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together

Continuous Internal Evaluation (CIE):

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

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

- Each experiment is to be evaluated for conduction with an observation sheet and record write-up. Rubrics for the evaluation of the journal/write-up for hardware/software experiments are designed by the faculty who is handling the laboratory session and are 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 down to **30 marks** (60% of maximum marks).
- Weightage to be given for neatness and submission of record/write-up on time.
- Department shall conduct a test of 100 marks after the completion of all the experiments listed in the syllabus.
- In a 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.
- The marks scored shall be scaled down to **20 marks** (40% of the maximum marks).

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

Semester End Evaluation (SEE):

- SEE marks for the practical course are 50 Marks.
- SEE shall be conducted jointly by the two examiners of the same institute, examiners are appointed by the Head of the Institute.
- The examination schedule and names of examiners are informed to the university before the conduction of the examination. These practical examinations are to be conducted between the schedule mentioned in the academic calendar of the University.
- All laboratory experiments are to be included for practical examination.
- (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.

- Students can pick one question (experiment) from the questions lot prepared by the examiners jointly.
- Evaluation of test write-up/ conduction procedure and result/viva will be conducted jointly by examiners.

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)

Change of experiment is allowed only once and 15% of Marks allotted to the procedure part are to be made zero.

The minimum duration of SEE is 02 hours

Suggested Learning Resources:

-