ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ
("ವಿ ಟ ಯು ಅಧಿನಿಯಮ 1994"ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)
VISVESVARAYA TECHNOLOGICAL UNIVERSITY
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REGISTRAR

REF: VTU/BGM/BOS/AEC-CV /2024-25/ 750
DATE: 20 MAY 2024

CIRCULAR

Subject: BCV456B -GS with Quantum GIS theory course converted to Practical Courseregarding...

Reference: **01.** VTU/...2024-25/601, Dated: 11.05.2024 circular for feedback
02. Chairperson BoS email dated: 18.05.2024
03. The Hon'ble Vice-Chancellor's approval dated: 20.05.2024

The 2022 scheme's 4th semester AEC's SEE details were circulated (reference 01) for feedback. Based on the input from the college, the Board of Studies in Civil Engineering, VTU Belagavi, updated the theory course/subject BCV456B-GIS with Quantum GIS to the practical course/subject BCVL456B-GIS with Quantum GIS (Lab). The practical course/subject syllabus is enclosed with this circular for reference to the stakeholders concerned.

All the principals of the engineering colleges under the ambit of the university are hereby informed to bring the content and attached practical syllabus to the notice of all concerned.

Encl: BCVL456B Syllabus copy

Sd/-
REGISTRAR

To,

1. **The Principals of all Engineering Colleges (Non-Autonomous, , and Constituent) under the ambit of the university.**
2. **The Chairperson/Program Coordinator, university department at Kalaburagi, Mysuru, Bengaluru and Belagavi**

Copy to

- The Hon'ble Vice-Chancellor through the secretary to VC for information
- The Registrar (Evaluation) VTU Belagavi for information and needful
- The Director ITI SMU VTU Belagavi, make arrangements for uploading of the circular on VTU web Portal
- The Special Officer (QPDS) Examination section VTU Belagavi for needful
- Office copy

REGISTRAR
20.5.24

"ಜ್ಞಾನ ಸಂಗಮ" ಬೆಳಗಾವಿ – 590 018, ಕರ್ನಾಟಕ "Jnana Sangama", Belagavi - 590 018, Karnataka, INDIA

GIS with Quantum GIS (Lab)		Semester	4
Course Code	BCVL456B	CIE Marks	50
Teaching Hours/Week (L: T:P: S)	0:0:2:0	SEE Marks	50
Total Hours of Pedagogy	15	Total Marks	100
Credits	01	Exam Hours	02
Examination type (SEE)	Practical		

Course objectives:

- Learning the open-source QGIS software for Civil Engineering applications
- Understand raster and vector data
- Creation of base maps and thematic maps for the specific application

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teachers can use to accelerate the attainment of the various course outcomes.

1. Demonstration of open-source software for GIS
2. YouTube videos to learn GIS software
3. PowerPoint presentations.

Sl. No.	Experiments
1	Installation and demonstration of open-source QGIS software, Useful commands for geo-processing, sample Vector and raster data
2	Creation of shape files with point features and practice in updating attribute table with necessary information
3	Creation of shape files with line features and practice to update attribute table with necessary information
4	Creation of shape files with polygon features and practice to update attribute table with necessary information
5	Demonstrate vector data and raster data with examples
6	Demonstrate the importance of map registration and projection. Discuss significance of ground control points
7	Demonstrate and discuss the importance of base maps and thematic maps with example
8	Create shape file for LULC map for a given area
9	Create shape file transport network for collection and disposal of waste from different sources like household, hotels, hospitals, etc.
10	Create a shapefile for different types of roads using proper colour codes
11	Create a shape file for formation of layout with complete layout features like road, waterline, sewage network, power supply network, etc.
12	Demonstrate the supervised and unsupervised classification foe creating thematic maps.

Course outcome (Course Skill Set)

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

1. Use open-source software for civil engineering applications
2. Various tools in QGIS software
3. Create thematic layers with attribute data
4. Generate maps for decision making

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:

Books

1. Geographic Information System-An Introduction, Tor Bernharadsen, 2009, 3rd Edition, Wiley India Pvt. Ltd. New Delhi, ISBN - 9788126511389.
2. Principles of Remote sensing and Image Interpretation, Lillesand and Kiefer, 2011, 6th Edition, John Wiley Publishers, New Delhi, ISBN – 8126532238.

Web links and Video Lectures (e-Resources):

- YouTube videos
- https://docs.qgis.org/3.16/pdf/en/QGIS-3.16-DesktopUserGuide-en.pdf for QGIS manual
- NPTEL Lectures

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

- Prepare the thematic maps using google earth images for various applications