Vel Tech Multi Tech

Dr.Rangarajan Dr.Sakunthala Engineering College

An Autonomous Institution

Academic Audit Manual

2023

Vel Tech Multi Tech

Dr.Rangarajan Dr.Sakunthala Engineering College

An Autonomous Institution

Institution Vision

Elevating well being of humanity by augmenting human resource potential through quality technical education and training.

Institution Mission

- To effectuate supremacy in technical education through articulation of research and industry practices for social relevance.
- To inculcate the habit of lifelong learning.
- To exhibit professional ethics, commitment and leadership qualities.

Vision of IQAC

To ensure and enhance quality in teaching-learning, research, and outreach activities enabling the institution to achieve excellence

Mission of IQAC

To monitor & improve Key Performance Indicators

- Academic Excellence
- Research & Innovation
- Industry Institute Interaction
- Student Support
- Infrastructural Development
- Institutional Excellence

1. ACADEMIC AUDIT

The Academic Audit, like more traditional program reviews, is a peer review process which includes a self-study and a site visit by peers from outside the institution. It emphasizes self-reflection and self-improvement in addition to compliance with predetermined standards.

2. DEFINITIONS

a) "Commission" means University Grants Commission (UGC).
b) "College" means Vel Tech Multi Tech Dr.Rangarajan Dr.Sakunthala Engineering College.
c) "Programme" means cohesive arrangement of courses, co-curricular and extracurricular activities to accomplish predetermined objectives leading to the award of a degree.
d) "Course" means a unit of teaching, which encompasses various topics, that typically lasts one semester, is led by one or more faculty and has a fixed set of registered students.
e) "Degree" means an academic degree conferred by the University upon those who complete the undergraduate / postgraduate / doctoral programme successfully.
f) "Academic Year" means a period consisting of two consecutive (one odd + one even) semesters.
g) "Choice Based Credit System" means providing choice for students to select courses from the prescribed course categories (core, elective, value-based, complementary skill courses), in the preferred semester complying prerequisites and based on their learning aptitudes.
h) **Program Educational Objectives (PEOs)** – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.
i) **Graduate Attributes (GAs)**– Graduate attributes form a set of individually assessable outcomes that are the components indicative of the graduate's potential to acquire competence to practice at the appropriate level. The graduate attributes are exemplars of the attributes expected of a graduate from an accredited programme. Graduate attributes are clear, succinct statements of the expected capability, qualified if necessary by a range indication appropriate to the type of programme.
j) **Programme Specific Criteria (PSC)** - Program Specific Criteria provide the specificity needed for interpretation of the baccalaureate level criteria as applicable to a given discipline. Requirements stipulated in the Program Specific Criteria are limited to the areas of curricular topics and the availability of faculty. If a program, by virtue of its title, becomes subject to two or more sets of Program Specific Criteria, then that program must satisfy each set of Program Specific Criteria; however, overlapping requirements need to be satisfied only once.

k) **Programme Outcomes (POs)** – Programme outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire as they progress through the program. Learning outcomes must be fulfilled at the exit level of a programme that are consistent with the educational objectives

l) **Course Outcomes (COs)** - Course outcomes describe what students are expected to know and be able to do by the time of completion of a course. These relate to the skills, knowledge, and behaviors that students acquire as they undergo the course.

m) **Assessment** – Assessment is one or more processes that identify, collect, and prepare data to evaluate the attainment of student outcomes. Effective assessment uses relevant direct, indirect, quantitative and qualitative measures as appropriate to the outcome being measured. Appropriate sampling methods may be used as part of an assessment process.

n) **Evaluation** – Evaluation is one or more processes for interpreting the data and evidence accumulated through assessment processes. Evaluation determines the extent to which student outcomes are being attained. Evaluation is expected to result in decisions and actions regarding program improvement.

3. PURPOSE OF ACADEMIC AUDIT

- To encourage departments or programs to evaluate their "various academic processes vis-à-vis their quality" – the key faculty activities required to produce, assure, and regularly improve the quality of teaching and learning.
- To facilitate HoDs how faculty approach to academic decision making and how they organize their work, using the resources available to them and working collegially to provide a quality education in the best interests of the student learning.

4. OBJECTIVES OF ACADEMIC QUALITY AUDIT

- To assure that each course in the curriculum addresses, agreed upon content, that sound teaching practices are carried out appropriately and consistently, that assessments are conducted as planned, and that agreed upon plans to improve courses or the program as a whole are implemented by the concerned persons.
- To assure ourselves that other faculty activities affecting students, such as academic advisement, are being performed appropriately and consistently.
- To provide meaningful, timely feedback and recognition to faculty regarding how they are performing work related to the curriculum, teaching and learning, assessment, and other practices affecting students.
- To identify benchmarked best practices in quality assurance and use this information to improve how we assure that the work of the program is performed appropriately and consistently.
- To review our quality assurance practices periodically to see how they might be improved.

5. ELEMENTS OF ACADEMIC AUDIT

The focal elements of the academic audit are:

1. Curriculum Design
2. Teaching-Learning
3. Assessment and Evaluation

5.1 Curriculum Design

The curriculum audit for any programme is a strategy for taking the programme towards excellence. It is one of the methods to assure the quality of graduates being produced.

The curriculum audit is conducted with the following purposes.

- Improve, expand, innovate, redesign, add value, reengineer and increase the scope of the education programme.
- Compare the provisions of curriculum and actual achievements and find out the gaps in respect of well-defined criteria.
- Assess the level of quality attainment in different phases of curriculum life cycle.
- Identify the difficulties in the implementation of the curriculum.
- Design and implement the curricular innovations.
- Assure the quality for the next cycle of the programmes.
- Compare the effectiveness of the programmes within the institution and among the institutions.
- To verify the extent of curriculum compliance to the guidelines of concerned Regulatory Authority.
- Assure the effective participation / involvement of external stakeholders in the curriculum design & revision.
- To verify the fulfillment of curriculum with the requirement of the Program Specific Criteria (PSC) of respective programme prescribed by appropriate professional / lead society.
- To verify the adequacy of the curriculum to address all the Program Outcomes of the respective programs.
- To verify the frequency of curriculum revision / syllabi modification.
- To analyse the summary of feedback of course handling faculty on courses & syllabi.
- To verify the Recommendations of BoS & Academic Council incorporated in the curriculum & syllabi.
- To verify the relevance of course outcomes with respect to the content.

5.2 Teaching-Learning

- To consciously consider the program outcomes and course outcomes to decide the teaching methods in our courses.
- To discuss our teaching practices with each other and work collaboratively to improve teaching and learning.
- To consult sources beyond our own faculty while selecting our teaching practices. (e.g., employers, students or graduates, comparable programs in other institutions, professional associations, etc.)
- To identify the best practices in teaching and use these information to improve our own teaching.
- To review periodically our teaching methods to see how they might be improved.
- To monitor the conduct of the meetings Course Coordinator / Module Coordinator as per the schedule.
- To follow-up action suggested in the Course Coordinator / Module Coordinator Meeting.

- To monitor the implementation of Innovative Teaching – Learning / Active Learning Methods Attempted / Incorporated / Employed / Contemplated.
- To verify course file maintenance.
- To analyse students' feedback and follow-up action.

5.3 Assessment and Evaluation

- To measure the extent to which our students are achieving course outcomes and program outcomes
- To work collaboratively to develop and implement assessments of course outcomes and program outcomes.
- To consult sources beyond our own faculty when designing assessments of program learning objectives. (e.g., employers, students or graduates, comparable programs in other institutions, professional associations)
- To discuss assessment data and use our findings to improve our curriculum, co-curriculum and teaching practices.
- To identify the best practices in assessment of course outcomes and program outcomes and use this information to improve our assessments.
- To review periodically our assessment methods to see how they might be improved.
- To assess the fairness and transparency in the evaluation.
- To identify whether assessment has been conducted for the entire course outcomes and program outcomes.
- To identify the effectiveness of assessment methods.
- To verify the adequacy of laboratory spaces, equipment etc. for the conduct of experiments.

6. AUDIT PROCESS – THE PEER REVIEW

- Auditors are primarily academicians who are trained on education quality processes and audit methodology.
- Audit team (2-4 members) most likely come from other institutions.
- Since the auditors focus on quality processes, they do not have to come from the academic discipline of the department being audited.
- Audit visits are typically one day per department.
- Auditors meet the departmental leadership, faculty, and students.
- Auditors write a report highlighting examples of exemplary practice, noting areas for improvement, and evaluating a department's approach to educational quality practices.

7. GUIDELINES TO AUDITOR(s) / AUDITEE(s)

Following tables show the Audit criteria & guidelines for both Auditors and Auditees vis-à-vis documents, material evidences, exhibits etc. to be verified during the audit process and prepared / maintained for audit process respectively. Tables 1, 2 and 3 shows the Audit criteria for curriculum design, teaching-learning and assessment & evaluation respectively.

Table 1. Audit Criteria for Curriculum Design

Sl. No.	Criteria	Guidelines to the Auditor and Auditees
1	The extent of curriculum compliance to the guidelines of concerned Regulatory Authority (eg. AICTE for technical programmes)	Verify whether guidelines of the respective regulatory council followed and complied.
2	Effective participation / involvement of external stakeholders in the curriculum design & revision	Minutes of the meeting, mail communications, consolidated views of stakeholders etc. should be verified.
3	Satisfaction of curriculum for the requirements of Program Specific Criteria (PSC) of respective programme prescribed by appropriate professional / lead society	Mapping of program curriculum with Program Specific Criteria of appropriate professional society. Mapping of program curriculum with faculty competency.
4	Adequateness of the curriculum to address all the Program Outcomes of the respective program	Mapping of program curriculum / courses / course outcomes with programme outcomes to be verified.
5	Frequency of curriculum revision / syllabi modification	Once in semester / year / two years / three years / four years.
6	Summary of feedback of course handling faculty on course & syllabus	Consolidated feedback summary of individual course handling faculty on course & syllabus
7	Recommendations of BoS incorporated in the curriculum & syllabi	Minutes of BoS and revised curriculum and syllabus.
8	Recommendations of Academic Council incorporated in the curriculum & syllabi	Minutes of Academic Council and revised curriculum and syllabus.
9	Relevance of course outcomes with respect to the content.	Course Outcomes and Course Articulation Matrix

Table 2. Audit Criteria for Teaching - Learning

Sl. No.	Criteria	Guidelines to the Auditor and Auditees
1.	Conduct of Course Coordinator/ Module Coordinator Meeting as per the schedule	Regular meetings must be conducted. Adherence to the meeting schedule. Discussion of Agenda tabled. Resolution made on each agenda tabled.
2.	Action taken / follow up of Course Coordinator /Module Coordinator Meeting	Implementation of actions arisen from the meetingresolution. Have observations made by the HoD & Dean concerned?
3.	Innovative Teaching – Learning / Active LearningMethods Attempted / Incorporated / Employed / Followed.	Instruction materials are prepared for delivery of syllabus content through contemporary teaching- learning methods.
4.	Students' attendance maintenance	Maintenance of the students' attendance and assessment record.
5.	Subject Allocation and Workload	Check the Competency matrix and preference list of the faculty. Records of Work load allocation
6.	Slow Learners and Fast Learners	For slow learners-Slow learner list, Action taken and Impact For fast learners-Fast learner list, Action taken and Impact
7.	Conduct of class committee meeting	Conduct of class committee meeting record with action taken
8.	Value added courses and Quality enhancement Programs(IV, Internship, seminars, workshops)	Maintenance of each files with impact
9.	Industry Institute Partnerships	Copy of MoUs signed. Events organized.
10.	i)Course file and lab manual maintenance ii) Conduct of prescribed number of hours as per theLTP	i)Maintenance of course file and lab manual as per the list. Relevance of the materials with content. Quality of the material & documentation. ii)Total hours to be conducted = (L+T+P)*15. For 1 credit (L = 15 / T = 30 / P = 30). L-Lecture; T-Tutorial; P-Practical; To be verified with logbook & course file.
11.	Feedback of the follow-up action on course faculty	Feedback collected from at least 80% of the students and analyzed, and corrective measures are taken.

12.	Student Mentoring	It is expected to verify whether student records are updated regularly. Impact of mentoring should be documented
13.	Availability of the academic facilities & Equipment / Software / Hardware to conduct experiments	Experimental set-up for all the experiments, working condition of equipment and availability of open source / licensed software.

Table 3. Audit Criteria for Assessment and Evaluation

Sl. No.	Criteria	Guidelines to the Auditor and Auditees
1	Assessment conducted to all the COs	Assessments (tests, seminars, assignments etc.) must be conducted to measure the attainment of each course outcome.
2	Taxonomy level of questions and corresponding course outcomes. Adequateness of time. Language and Grammar	Taxonomy level of at least one Assessment task should be as same as the level of the corresponding course outcome. A maximum of ±5% of total time error may be tolerated. Question should be free from spelling mistake and grammar mistake.
3	Assignment tasks and Taxonomy level	Taxonomy level of at least one Assignment task should be as same as the level of the corresponding course outcome.
4	Availability of schemes for evaluation. Fairness in the evaluation. Transparency in the evaluation	Mark allocation scheme must be available for each assessment. Rubrics are expected wherever required. A maximum of ±10% mark variation in the evaluation may be tolerated. It is expected to distribute the valued answer scripts to the students and get signature of the students in the answer script.
5	Attainment of CO PO and PSO's	Check whether COs, POs and PSOs has met the expected target
6	Quality of the experiments in practical courses / project work	It is expected to verify record / observation note book and laboratory manual.
7	a. Conduct of all the experiments	
	b. Regularity of observation and record work completion	Students completed one experiment in each lab session and got signature before the next lab class.
	c. Rubrics for practical courses	Verify the rubrics developed for practical course and followed for each experiment.
	d. Model Examinations	Verify some sample answer scripts.

e. Project review	Two / Three reviews must be conducted.
f. Rubrics for project work	Rubrics developed for various reviews informed to students well in advance and followed throughout the project work.
g. Project report as per guidelines	Verify the sample project report.

Table 4. Audit Criteria for Students' Performance

Sl. No.	Criteria	Guidelines to the Auditor and Auditees
1	Programs organized for students through various clubs	Check the proofs of event organized
2	Students performance in co-curricular and extracurricular activities	Check for the proofs of student's performance.
3	SWAYAM/NPTEL/MOOC/Self Learning	It is expected to verify whether student records areupdated regularly.
4	Details of Placement	It is expected to verify whether student records areupdated regularly.
5	Details of Higher Studies	It is expected to verify whether student records areupdated regularly.
6	Alumni Details and Contribution	It is expected to verify whether Alumni records areupdated regularly.

Table 5. Audit Criteria for Faculty Information and Contribution

Sl. No.	Criteria	Guidelines to the Auditor and Auditees
1	Faculty Details	It is expected to verify whether file is updated regularly.
2	Faculty Publication	It is expected to verify whether the record is updated regularly with proofs.
3	Funded Projects	It is expected to verify whether the record is updated regularly with proofs.

4	Patents	It is expected to verify whether the record is updated regularly with proofs.
5	Consultancy	It is expected to verify whether the record is updated regularly with proofs.
6	Awards and Recognition of faculties	It is expected to verify whether the record is updated regularly with proofs.
7	Faculty Certification of MOOCs through SWAYAM	It is expected to verify whether the record is updated regularly with proofs.
8	Professional Development Activities	It is expected to verify whether the record is updated regularly with proofs.
9	Faculty Members' Participation in STTPs/FDPs, Seminar , Workshop	It is expected to verify whether the record is updated regularly with proofs.

8. AUDIT REPORT

Following tables show the Audit report to be filled by the Auditor during audit process. Tables 6, 7, 8, 9 & 10 show the audit report form for curriculum design, teaching-learning, assessment & evaluation, Students' Performance & Faculty Information and Contribution respectively.

Table 6. Audit Report for Curriculum Design

Sl. No.	Criteria	Extent of Gaps	Description of Gaps or Scope for improvement	Strategies to bring improvement
1	The extent of curriculum compliance to the guidelines of concerned Regulatory Authority (eg. AICTE for technical programmes, BCI for law etc.)			
2	Effective participation / involvement of external stakeholders in the curriculum design & revision			
3	Satisfaction of curriculum for the requirements of Program Specific Criteria (PSC) of respective programme prescribed by appropriate professional / lead society			
4	Adequateness of the curriculum to address all the Program Outcomes of the respective program			

Sl. No.	Criteria	Extent of Gaps	Description of Gaps or Scope for improvement	Strategies to bring improvement
5	Frequency of curriculum revision / syllabi modification			
6	Summary of feedback of course handling faculty on course & syllabus			
7	Recommendations of BoS incorporated in the curriculum & syllabi			
8	Recommendations of Academic Council incorporated in the curriculum & syllabi			
9	Relevance of course outcomes with respect to the content			

Table 7. Audit Report for Teaching – Learning

Sl. No.	Criteria	Extent of Gaps	Description of Gaps or Scope for improvement	Strategies to bring improvement
1.	Conduct of Course Coordinator / Module Coordinator Meeting as per the schedule			
2.	Action taken / follow up of Course Coordinator / Module Coordinator Meeting			
3.	Innovative Teaching – Learning / Active Learning Methods Attempted / Incorporated / Employed / Followed.			
4.	Students' attendance maintenance			
5.	Course file maintenance			
6.	Feedback of the follow-up action on course faculty			
7.	Conduct of prescribed number of hours as per the LTP			
8.	Student Mentoring			
9.	Availability of the academic facilities & Equipment / Software / Hardware to conduct experiments			

Table 8. Audit Report for Assessment and Evaluation

Sl. No.	Criteria	Extent of Gaps	Description of Gaps or Scope for improvement	Strategies to bring improvement
1	Assessment conducted to all the COs			
2	Taxonomy level of questions and corresponding course outcomes			
3	Adequateness of time			
4	Language and Grammar			
5	Assignment tasks and Taxonomy level			
6	Availability of schemes for evaluation			
7	Fairness in the evaluation			
8	Transparency in the evaluation			
9	Quality of the experiments in practical courses / Project work			
	a. Conduct of all the experiments			
	b. Regularity of observation and record work completion			
	c. Rubrics for practical courses			
	d. Model Examinations			
	e. Project review			
	f. Rubrics for project work			
	g. Project report as per guidelines			

Table 9. Audit Report for Students' Performance

Sl. No.	Criteria	Extent of Gaps	Description of Gaps or Scope for improvement	Strategies to bring improvement
1	Programs organized for students through various clubs			
2	Students performance in co-curricular and extracurricular activities			
3	SWAYAM/NPTEL/MOOC/Self Learning			

4	Details of Placement			
5	Details of Higher Studies			
6	Alumni Details and Contribution			

Table 10. Audit Report for Faculty Information and Contribution

Sl. No.	Criteria	Extent of Gaps	Description of Gaps or Scope for improvement	Strategies to bring improvement
1	Faculty Details			
2	Faculty Publication			
3	Funded Projects			
4	Patents			
5	Consultancy			
6	Awards and Recognition of faculties			
7	Faculty Certification of MOOCs through SWAYAM			
8	Professional Development Activities			
9	Faculty Members' Participation in STTPs/FDPs, Seminar , Workshop			

Extent of Gaps

D - Deficiency: Not complied and must be addressed immediately; there is a huge gap between the expected and available.

W - Weakness: Poorly complied with high-probability for non-conformance; there is a moderate gap between the expected and available.

C - Concern: Complied at present but there is a probability for non-conformance in near future.

S - Strongly Complied.

9. SUMMARY OF AUDIT REPORT

Name of the Department	
Name of the Programme	
Name of the HoD	
Name of the Auditor-1 with affiliation (Internal / External)	
Name of the Auditor-2 with affiliation (Internal / External)	
Date(s) of Audit	

9.1 Curriculum Design

Description of Gaps:

Suggestions for Improvement:

Signature of the Auditor-1

Signature of the Auditor-2

9.2 Teaching-Learning

Description of Gaps:

Suggestions for Improvement:

Signature of the Auditor-1

Signature of the Auditor-2

9.3 Assessment and Evaluation

Description of Gaps:

Suggestions for Improvement:

Signature of the Auditor-1

Signature of the Auditor-2

9.4 Students Performance

Description of Gaps:

Suggestions for Improvement:

Signature of the Auditor-1

Signature of the Auditor-2

9.5 Faculty Information and Contribution

Description of Gaps:

Suggestions for Improvement:

Signature of the Auditor-1

Signature of the Auditor-2