B.Voc. in .
Farm Equipment & Machinary and
Vehicle Testing

Prospectus No. 151710

संत गाडगे बाबा अमरावती विद्यापीठ

SANT GADGE BABA AMRAVATI UNIVERSITY

अभ्यासक्रमिका
अभियांत्रिकी व तांत्रिकी विद्याशाखा

(FACULTY OF ENGINEERING & TECHNOLOGY)

PROSPECTUS

OF

BACHELOR OF VOCATION

IN THE SUBJECTS

FARM EQUIPMENT & MACHINERY AND

VEHICLE TESTING

(Semester Pattern Three Year Degree Course)

Semester-I & II, Winter-2014 & Summer-2015
(Diploma in Farm Equipment & Machinery/Vehicle Testing)
Semester-III & IV Winter-2015 & Summer-2016
(Advance Diploma in Farm Equipment & Machinery/Vehicle Testing)
Semester-V & VI Winter-2016 & Summer-2017
(B. Voc. Degree in Farm Equipment & Machinery/Vehicle Testing)

2015
Visit us at www.sgbau.ac.in

Price Rs. ...../-

SANT GADGE BABA AMRAVATI UNIVERSITY

SPECIAL NOTE FOR INFORMATION OF THE STUDENTS

(1) Notwithstanding anything to the contrary, it is notified for general information and guidance of all concerned that a person, who has passed the qualifying examination and is eligible for admission only to the corresponding next higher examination as an ex-student or an external candidate, shall be examined in accordance with the syllabus of such next higher examination in force at the time of such examination in such subjects, papers or combination of papers in which students from University Departments or Colleges are to be examined by the University.

(2) Be it known to all the students desirous to take examination/s for which this prospectus has been prescribed should, if found necessary for any other information regarding examinations etc. refer the University OrdinanceBooklet the various conditions/provisions pertaining to examinations as prescribed in the following Ordinances-

Ordinance No. 1	:	Enrolment of Students.
Ordinance No. 2	:	Admission of Students
Ordinance No. 4	:	National Cadet Corps
Ordinance No. 6	:	Examination in General (relevant extracts)
Ordinance No. 18/2001	:	An Ordinance to provide grace marks for passing in a Head of passing and Inprovement of Division (Higher Class) and getting Distinction in the subject and condonation of defficiency of marks in a subject in all the faculties prescribed by the Statute NO.18, Ordinance 2001.
Ordinance No.9	:	Conduct of Examinations (Relevant extracts)
Ordinance No.10	:	Providing for Exemptions and Compartments
Ordinance No. 19	:	Admission Candidates to Degrees
Ordinance No.109	:	Recording of a change of name of a University Student in the records of the University.
Ordinance No. 6/2008	:	For improvement of Division/Grade.
Ordinance No.19/2001	:	An Ordinance for Central Assessment Programme, Scheme of Evaluation and Moderation of answerbooks and preparation of results of the examinations, conducted by the University, Ordinance 2001.

Registrar
Sant Gadge Baba Amravati University

Sant Gadge Baba Amravati University, Amravati

DIRECTION

No12 /2015 Date : 27/08/2015

Subject :- Examinations leading to the Diploma/Advance Diploma/ Degree in the subjects Farm Equipment and Machinery and Vehicle Testing of B. Voc. courses.

Whereas, the University Grants Commission, New Delhi vide its D.O.No.F.2-2/2014 (B.Voc.), dated 16/5/2014 has granted approval for starting the B.Voc. Degree programme in the subjects Farm Equipment & Machinery, and Vehicle Testing to Late Bhaskarrao Shingne Arts College, Khamgaon from the academic session 2014-2015,

AND

Whereas, the Academic Council in its meeting held on 29.9.2014 vide Item No. 52 has granted affiliation to the said college for starting the courses under the U.G.C.B.Voc. Degree programme in the subjects Farm Equipment & Machinery, and Vehicle Testing from the academic session 2014-2015,

AND

Whereas, the Hon'ble Vice-Chancellor has constituted the Ad-hoc Committee on 16/9/2014 under the Chairmanship of Hon'ble Dean, Faculty of Science for preparing draft Scheme of teaching & examinations, draft Syllabus, and other details for the subjects Farm Equipment & Machinery, and Vehicle Testing B.Voc. degree course, and also deciding Faculty and Board of Studies for respective courses sanctioned to the college,

AND

Whereas, the Deans' Committee under the chairmanship of Hon'ble Vice-Chancellor in its meeting held on dated 7/4/2015 has considered the guidelines of U.G.C. for introduction of Bachelor of Vocation (B.Voc.) degree programme in the University and the colleges under the National Skills Qualification Framework (N.S.Q.F.) scheme and decided to forward the recommdations of the Ad-hoc Committee to the Faculty regarding the draft Schemes of teaching & examination, draft syllabi, provisions to be incorporated in the draft Ordinance, Board of Studies and Faculty of the B.Voc. degree programme,

AND

Whereas, the draft Syllabi, Scheme of teaching & examinations as prepared and recommended by the Ad-hoc Committee were placed before the Faculty of Engineering &Technology in its meeting held on 15/4/2015 and the Faculty resolved to accept and recommended to the Academic Council to constitute an independent "Faculty of Vocational Studies" for the B.Voc. degree Course,

AND

Whereas, the Academic Council in its meeting held on 6/5/2015 vide Item No. 53 has considered the guidelines of U.G.C. for introduction of Bachelor of Vocation (B.Voc.) degree programme in the University and the colleges under the National Skills Qualification Framework (N.S.Q.F.) scheme, while considering the recommendations of the Ad-hoc Committee regarding draft Schemes, draft sylabi and other provisions to be incorporated in the draft Ordinance of B.Voc. degree course to the said college and council resolved as under :-

i) Recommended to Management Council to institute the degree in the University.

ii) Approved the recommendations of syllabus of the General Components prepared by the Ad-hoc Committee

iii) The Course will be in the Faculty of Engineering & Technology.

iv) Hon'ble Vice-Chancellor shall take the necessary actions u/s 14 (7) & 14 (8) of the Maharashtra Universities Act, 1994 regarding the legislation of the Course.

AND

Whereas, the decision of the Academic Council was placed before the Ad-hoc Committee in its meeting held on 26/6/2015, and the Committee recommended to the faculty as under :-

"The scheme of examinations along with the syllabi of the subjects (i) Farm Equipment & Machinery and (ii) Vehicle Testing of B.Voc. Degree Course and the provisions to be incorporated in the Ordinance as per U.G.C. Guidelines."

AND

Whereas, the Faculty of Engineering &Technology in its meeting held on 16/7/2015 vide Item No. 36 has accepted the draft Scheme of teaching & examinations, draft Syllabi and detail provisions to be incorporated in the Ordinance in the subjects of Farm Equipment & Machinery, and Vehicle Testing of the B.Voc. degree course and recommended to the Academic Council for further consideration and approval,

AND

Whereas, the Hon'ble Vice-Chancellor on 14/8/2015 has accepted the recommendations of the Faculty of Engineering & Technology regarding the provisions to be incorporated in the draft Ordinance along with the draft Scheme of teaching & examinations and the draft Syllabi of the subjects (i) Farm Equipment & Machinery, and (ii) Vehicle Testing of the B.Voc. degree courses under Section 14 (7) of the Maharashtra Universities Act, 1994,

AND

Whereas, the Scheme of teaching & examinations and other provisions for the B.Voc. Degree course is required to be regulated by an Ordinance/Regulation and preparing the Ordinance/Regulation for the said course is time consuming process,

AND

Whereas, the admissions of the students in the above said course are to be made in the concerned colleges of the University from the academic session 2014-2015 and onwards,

Now, therefore, I, Dr. M.K.Khedkar, the Hon'ble Vice-Chancellor of Sant Gadge Baba Amravati University, Amravati in exercise of the powers conferred upon me under Sub-Section 8 of section 14 of the Maharashtra Universities Act, 1994, do hereby direct as under :-

1) This Direction may be called "Examinations leading to the Diploma/Advance Diploma/ Degree in the subjects Farm Equipment and Machinery, and Vehicle Testing of B.Voc. Degree Courses" in the Faculty of Engineering & Technology , Direction, 2015.

2. This direction shall come into force with effect from the academic sessions as shown below:

(i) acedemic session 2014-2015 for Semester I & II
(ii) acedemic session 2015-2016 for Semester III & IV
(iii) acedemic session 2016-2017 for Semester V & VI

3. Notwithstanding the integrated nature of a course spread over more than one academic year, the Ordinances in force at the time a student joins a course shall hold good only for the examination held during or at the end of the academic year. Nothing in these Ordinances shall be deemed to debar the University from amending the ordinances subsequently and the amended ordinances, if any, shall apply to all the students whether old or new.

4. Bachelor of Vocation (B. Voc.) is launched under the scheme of University Grants Commission on skill development based higher education leading to Bachelor of Vocation (B. Voc.) degree with multiple exits as Diploma/Advanced Diploma under the National Skill Qualification framework. The B.Voc. programme incorporate specific job roles and their National Occupational Standards along broad based general education. The following shall be the examinations levels that are leading to the Diploma/ Advance Diploma/ Degree of Bachelor of Vocation namely :–

(i) the B.VoC. Part-I Examination (Leading to Diploma in Farm Equipment and Machinery/ Vehicle Testing)

(ii) the BVoC Part-II Examination (Leading to Advance Diploma Farm Equipment and Machinery/ Vehicle Testing) and

(iii) the B.Voc. Final Examination (Leading to Degree of Bachelor of Vocation in Farm Equipment and Machinery/ Vehicle Testing)

5. This direction offers Bachelor degree programme under the vocational scheme formulated by UGC through establishing National Skill Qualification Framework (NSQF). This programme is of a three academic years course. If a student fails to continue studies of a Three year course, she/he will entitled to award diploma as per the Table I.

Table-I

Sr. No.	Semester	Award	Corresponding NSQF level
1.	Semester I & II	Diploma in Farm Equipment and Machinery/ Vehicle Testing	5
2.	Semester III & IV	Advanced Diploma in Farm Equipment and Machinery/ Vehicle Testing	6
3.	Semester V & VI	Bachelor Degree in Farm Equipment and Machinery/ Vehicle Testing	7

6. **Admission and Eligibility:**

6.1. The duration of the course leading to the Bachelor of Vocational Degree in Farm Equipment and Machinery & Vehicle Testing shall be as specified in the table I, and each year shall be divided into two semesters.

6.2. The admissions to the courses shall be made in the following manner:
Candidate seeking admission to Bachelor's degree in Farm Equipment and Machinery/ Vehicle Testing should have passed 10+2 from a recognized board or its equivalent. A student can also seek admission to this programme (Advance Diploma/ Degree) on the basis of qualifying examination in the respective subject from statutory University /affiliated college/ Institution/ autonomous college/ constituent College, whatever the case may be. As per the scheme of examination proposed by the Board of Studies.

Semester Scheme: Admissions covered under the Semester/12 month scheme are made in a year in one cycles, may be in the month of May or June or after the declaration of results entry level qualification examination.

6.3. A candidate seeking admission to the course leading to the award of a Bachelor of Vocation Degree shall fulfill any of the following conditions:

Passed senior secondary examination on the pattern of 10+2 in any discipline, from a recognized Board of Education or 3-Year Diploma from the Board of Technical Education, any State of India, after Matriculation or an equivalent examination recognized by the University for advance Diploma/ Degree.

7. Subject to his/her compliance with the provisions of this Direction and other directions pertaining to Examination in force from time to time, the applicant for admission, at the end of the course of study of a particular semester/session, to an Examination specified in column (1) of the table below, shall be eligible to appear if,

i) he/she satisfies with the conditions in the table and the provisions thereunder.

ii) he/she complies with the provisions of the ordinance pertaining to the Examination in general from time to time.

TABLE-II

Name of Exam	The student should have passed the Exam.	The Student should have satisfactorily completed the foll-owing semester	The student should have passed following examination
01	02	03	04
First Semester	XII standard Examination or equivalent	.....	.....
Second Semester	.....	I Semester	.....
Third Semester	.....	II Semester	2/3rd heads of I & II Sem. combined together
Fourth Semester	.....	III Semester	- --- -
Fifth Semester	I & II Semester	IV Semester	2/3rd heads of III & IV Sem. combined together
Sixth Semester	------	V Semester	-----

8. The schemes of teaching and examinations shall be as provided under Appendix – A to F appended with this direction.

9. The fees structure shall be as prescribed by the University from time to time.

10. The assessment for the general education component should be done by the university as per their prevailing standards and procedures. The assessment for the skill development components should necessarily focus on practical demonstrations of the skills acquired. The University shall like to consult the respective Sector Skill Council for designing the examination and assessment pattern for the skill development components. The university may also consider using the designated assessors of Sector Skill Councils/industry associations for the conduct of practical assessment. The system of evaluation will be as follows: As a part of internal assessment, each assignment/test/viva-voce/project will be evaluated in terms of marks/ grades. If the mark system offered by the Sector Skill Councils/industry associations them the marks of separate assignments and the final (semester-end) examination will be added together and then converted into a grade and later a grade point average. Results will be declared for each semester and the final examination will give total grades and grade point average.

11. The computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of an examinee shall be as given below:-

The marks will be given in all examinations which will include college/ industrial assessment marks and the total marks for each Theory / Practical shall be converted into Grades as per Table III

SGPA shall be calculated based on Grade Points corresponding to Grade as given in Table III and the Credits allotted to respective Theory / Practical shown in the scheme for respective semester.

SGPA shall be computed for every semester and CGPA shall be computed only in VI semester. The CGPA of VI semester shall be calculated based on SGPA of V and SGPA of VI semester as per following computation :-

$$SGPA = \frac{C_1 \times G_1 + C_2 \times G_2 + \ldots\ldots + C_n G_n}{C_1 + C_2 + \ldots\ldots + C_n}$$

Where C_I = Credit of individual Theory / Practical

G_I = Corresponding Grade Point obtained in the respective Theory / Practical

$$CGPA = \frac{(SGPA)_V \times (Cr)_V + (SGPA)_{VI} \times (Cr)_{VI}}{(Cr)_V + (Cr)_{VI}}$$

Where $(SGPA)_V$ = SGPA of V Semester

$(Cr)_V$ = Total Credits for V Semester

$(SGPA)_{VI}$ = SGPA of VI Semester

$(Cr)_{VI}$ = Total Credits for VI Semester

CGPA equal to 6.00 and above shall be considered as equivalent to First Class which shall be mentioned on Grade Card of VI Semester as a foot note.

TABLE III

THEORY and PRACTICAL

Grade	Percentage of Marks	Grade Points
AA	80 ≤ Marks ≤ 100	10
AB	70 ≤ Marks ≤ 80	9
BB	60 ≤ Marks ≤ 70	8
BC	55 ≤ Marks ≤ 60	7
CC	50 ≤ Marks ≤ 55	6
CD	45 ≤ Marks ≤ 50	5
DD	40 ≤ Marks ≤ 45	4
FF	00 ≤ Marks ≤ 40	0
ZZ	Absent in Examination	—

12. The list of successful candidates after the completion of the final year examination of the concerned programme shall be arranged in three divisions on the basis of the aggregate marks obtained in his Diploma/ Advance Diploma/Bachelor's degree:

(i) Those who obtained CGPA 8.00 or more- First Class (Exemplary)

(ii) Those who obtain CGPA 7.50 or more but less than 8- First class with distinction.

(iii) Those who obtain CGPA 6 or more but less than 7.5- First Class.

(iv) Those who obtain CGPA 5.50 or more but less than 6.00 - Higher Second Class.

(v) Those who obtain CGPA 4.00 or more but less than 5.45 - Second Class.

(vi) Those who obtained Less than 4.00- Fail.

13. **Curriculum**

a. The curriculum in each of the years of the programme would be a suitable mix of **General Education Components** and **Skill Development Components**.

b. The University should develop the curriculum in consultation with industry. The industry representatives should be an integral part of the academic bodies of the University/ college. While doing so, they should work towards aligning the skills components of the curriculum with the National Occupation Standards (N.O.S.s) developed by the respective Sector Skill Councils.

c. Monitoring, evaluation and updating of the curriculum needs to be done periodically in consultation with Sector Skill Councils/industry associations, keeping in view their requirements and changes in NOSs and monitored through Skill component development committee of the University.

d. The scope of the subjects shall be as indicated in the syllabi.

e. The medium of instruction and examination shall be English.

14. Provisions of Ordinance No.18 of 2001 in respect of an Ordinance to provide grace marks for passing in a Head of passing and improvement of Division (Higher Class) and getting distinction in the subject

15. Examination and Minimum Pass Marks:

15.1. Examinations of all Semesters of General Education Component will be held in as per the schedule of University on the dates notified by the University, however, the examinations for Skill component of the course should be conducted by the respective Sector Skill Councils. In case, there is no Sector Skill Council for a specific trade, the examination shall be conducted by an allied Sector Council or the Industry partner, under the vigilance of Skill component development committee of the university.

15.2. Every candidate shall be examined in the subject(s) as per criteria laid down in the concerned Scheme of Examinations/Syllabus prescribed for the programme by the Academic Council from time to time.

15.3. The minimum percentage of marks for passing any Semester examination shall be 40% in each paper (theory/practical/workshop/viva-voce/training report/project report as per scheme of examination and internal assessment/ sessionals, wherever applicable and provisions of ordinance no.6, under sub-clause 5, 8 , 10 and 32 shall be applicable to this Ordinance.

15.4. The evaluation of work-shop/project reports/training reports and the conduct of practical examinations and viva-voce, etc. wherever applicable, shall be done by sector skill council/ Industry partner. The Examination for General Component will be conducted at the examination centre approved by the University; however, for the skill component will be conducted at the examination centre identified by the sector skill council/ Industry partner in consultation with Skill component development committee of the university. Marks allotted to the students shall be submitted to the office of the Controller of Examinations within 15 days of the conduct of examinations as per method follow by Examination Section of the University. In the event to non-fulfillment of the above conditions, students of each Study centers will be marked as absent and result will be declared accordingly. The Study College may also invite examiners from Panel of Examiners prepared by the University Board of Studies in concern subject as per the existing norms for general component.

15.5. The provisions under the Ordinance No. 16 of 2007 shall be applicable regarding re-valuation for general component and for skill education component re-valuation/ re-assessment should be done by the respective sector skill council/ Industry partner as per the mechanism instrumented by them and submitted the marks to the controller of Examination within the 8 days.

15.6. If in case he/she is unable to pass assessments design and instituted by respective sector skill council/ Industry partner will entitled to avail two additional re-assessment attempts only after the completion of an intensive bridge course offered by the respective sector skill council/ Industry partner.

16. Shifting from one course to another course:

The students who are pursuing any of the equivalent courses from any statutory University/ Institute/ College/Board as a regular student and unable to continue by any justified reason shall be entitled to get admitted to this programme, as the case may be, provided all such candidates shall be examined as per the scheme of examination/ scheme of equivalence approved by the board of studies from time to time.

17. Miscellaneous Provisions:

17.1. Skill component development committee:

There shall be a Skill Component Development Committee at the University level shall be constituted by Hon,ble Vice-Chancellor as under:

i) Dean of the respective Faculty (Chairman).
ii) One member nominated by concern Board of Studies (Member).
iii) One member nominated by board of Examination (Member).
iv) One member nominated by respective Sector Skill Council/ Industry partner (Member).
v) One member nominated by Controller of Examination (Member).
vi) One member nominated by Head of the Institute of respective subject study center of statutory University /affiliated College/ Institution/ autonomous college/ constituent College, whatever the case may be (Member).

Duties and responsibilities of the Skill Component development Committee shall be as under:

a) To develop skill component in collaboration with respective sector skill council/ Industry partner.

b) Monitoring, evaluation and updating of the curriculum to be done periodically in consultation with Sector Skill Councils/industry associations and align the skills components of the curriculum with the National Occupation Standards (NO0Ss) developed by the respective Sector Skill Councils

c) To approve timetable for skill component examinations.

d) Monitoring of examinations in collaboration with Sector Skill Councils/Industry Associations.

e) To decide the award of Joint certificate if demand by the student.

f) Submission of marks of skill component to the University Examination Section.

g) To remove the difficulties if any faced during implementation of the skill component examination and report it to Hon'ble Vice-chancellor for further action.

h) Any other matter as it think fit for the effective implementation of the course.

17.2. As soon as possible, after the termination of the examination the Controller of Examinations shall publish a list of candidates who have passed the Semester examination, as the case may be as per rule.

17.3. The University after the completion of course, will award the diploma /advance diploma/ degree to the eligible students ONLY on payment of the prescribed fees. If the student is found to be not eligible even after completing the programme, University shall have right to cancel/with-hold his/her final result and the student shall have no legal right to claim the refund of fee or any financial or non- financial compensation.

17.4. Notwithstanding the integrated nature of the course(s) which is/are spread over more than one academic year the Ordinance in force at the time a student joins the course shall hold good only for the examination held during or at the end of the academic year and nothing in this Ordinance shall be deemed to debar the University from amending the Ordinance and the amended Ordinance, if any, shall apply to all the students whether old or new.

17.5. Any other provision not contained in the above shall be governed by the rules and regulations framed by the University from time to time.

Date : 26/08/2015

Sd/-
(Dr.M.K.Khedkar)
Vice-Chancellor

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
TEACHING & EXAMINATION SCHEME
DIPLOMA (ONE YEAR), ADVANCE DIPLOMA (TWO YEARS), BACHELOR OF VOCATION (B.VOC)
(THREE YEARS DEGREE COURSE – SEMESTER PATTERN)

Farm Equipment & Machinery (Semester I)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – A

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. P. Marks
								External Marks	Internal Marks (IA)		Th.
01	1BVCGEC1	Communication Skills – I	3	-	3	3	3	40	10	50	20
02	1BVCGEC2	Applied Computer Skills – I	3	-	3	3	3	40	10	50	20
03	1BVCFEM3	Basic of Automobile-I	3	-	3	3	3	40	10	50	20
04	1BVCFEM4	Workshop Technology-1	2	-	2	2	3	40	10	50	20
05	1BVCFEM5	Farm Tractor-1	3		3	3	3	40	10	50	20
06	1BVCGEC6	Communication Skills – 1- Lab.	-	3	3	3	2	25	25	50	-
07	1BVCGEC7	Applied Computer Skills – 1- Lab.	-	3	3	3	2	25	25	50	-
08	1BVCFEM8	Basic Automobile-1-Lab.	-	3	3	3	3	25	25	50	-
09	1BVCFEM9	Workshop Technology –1-Lab.	-	3	3	3	3	25	25	50	-
10	1BVCFEM10	Farm Tractor-1- Lab.		3	3	3	3	25	25	50	-
11	1BVCFEM11	Field work/ industrial visit	-	2	2	1			50	50	-
		Total	**14**	**17**	**31**	**30**		**325**	**225**	**550**	**100**

Note:
1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations
One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

Farm Equipment & Machinery (Semester II)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – B

Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme					
		Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
							External Marks	Internal Marks (IA)		Th.	Pr.
2BVCGEC1	Communication Skills – II	3	-	3	3	3	40	10	50	20	-
2BVCGEC2	Applied Computer Skills – II	3	-	3	3	3	40	10	50	20	-
2BVCFEM3	Basic of Automobile-II	3	-	3	3	3	40	10	50	20	-
2BVCFEM4	Workshop Technology-II	2	-	2	2	3	40	10	50	20	-
2BVCFEM5	Farm Tractor-II	3		3	3	3	40	10	50	20	
2BVCGEC6	Communication Skills – II- Lab.	-	3	3	3	2	25	25	50	-	20
2BVCGEC7	Applied Computer Skills – II- Lab.	-	3	3	3	2	25	25	50	-	20
2BVCFEM8	Basic Automobile-II-Lab.	-	3	3	3	3	25	25	50	-	20
2BVCFEM9	Workshop Technology –II-Lab.	-	3	3	3	3	25	25	50	-	20
2BVCFEM10	Farm Tractor-II- Lab		3	3	3	3	25	25	50	-	20
2BVCFEM11	Field work/ industrial visit	-	2	2	1			50	50	-	20
	Total	**14**	**17**	**31**	**30**		**325**	**225**	**550**	**100**	**120**

Note:
1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
Farm Equipment & Machinery (Semester III)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – C

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Pass Marks
								External Marks	Internal Marks (IA)		Th.
01	3BVCGEC1	English & Communication Skill – III	3	-	3	3	3	40	10	50	20
02	3BVCGEC2	Applied Computer Skill – III	3	-	3	3	3	40	10	50	20
03	3BVCFEM3	Farm Machinery & Testing – I	3	-	3	3	3	40	10	50	20
04	3BVCFEM4	Farm Equipment & Machinery – I	2	-	2	2	3	40	10	50	20
05	3BVCFEM5	Farm Machinery Electrical System	3		3	3	3	40	10	50	20
06	3BVCGEC6	Communication Skills – III- Lab.	-	3	3	3	2	25	25	50	-
07	3BVCGEC7	Applied Computer Skills – III- Lab.	-	3	3	3	2	25	25	50	-
08	3BVCFEM8	Farm Machinery Testing –I- Lab.	-	3	3	3	3	25	25	50	-
09	3BVCFEM9	Farm Equipment & Machinery – I-Lab.	-	3	3	3	3	25	25	50	-
10	3BVCFEM10	Farm Machinery Electrical Syst.-Lab.		3	3	3	3	25	25	50	-
11	3BVCFEM11	Field work/ industrial visit	-	2	2	1			50	50	-
		Total	**14**	**17**	**31**	**30**		**325**	**225**	**550**	100

Note:
1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

Farm Equipment & Machinery (Semester IV)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – D

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme					
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks (Th)	Internal Marks (IA)		Th.	Pr.
01	4BVCGEC1	Communication Skills – IV	3	-	3	3	3	40	10	50	20	-
02	4BVCGEC2	Soft Skill Development – I	3	-	3	3	3	40	10	50	20	-
03	4BVCFEM3	Farm Machinery & Testing – II	3	-	3	3	3	40	10	50	20	-
04	4BVCFEM4	Farm Equipment & Machinery – II	2	-	2	2	3	40	10	50	20	-
05	4BVCFEM5	Farm Machinery Electronics System	3		3	3	3	40	10	50	20	
06	4BVCGEC6	Communication Skills – IV- Lab.	-	3	3	3	2	25	25	50	-	20
07	4BVCGEC7	Soft Skill Development–I- Lab.	-	3	3	3	2	25	25	50	-	20
08	4BVCFEM8	Farm Machinery & Testing –II- Lab.	-	3	3	3	3	25	25	50	-	20
09	4BVCFEM9	Farm Equipment & Machinery – II-Lab.	-	3	3	3	3	25	25	50	-	20
10	4BVCFEM10	Farm Machinery Electronics System – Lab.		3	3	3	3	25	25	50	-	20
11	4BVCFEM11	Field work/ industrial visit	-	2	2	1			50	50	-	20
		Total	**14**	**17**	**31**	**30**		**325**	**225**	**550**	**100**	**120**

Note:
1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations
One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

Farm Equipment & Machinery (Semester V)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – E

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. P. Marks
								External Marks	Internal Marks (IA)		Th
01	5BVCGEC1	Communication Skills – V	3	-	3	3	3	40	10	50	20
02	5BVCGEC2	Soft Skill Development – II	3	-	3	3	3	40	10	50	20
03	5BVCFEM3	Automation in Farm Machinery	3	-	3	3	3	40	10	50	20
04	5BVCFEM4	Machine Element	3		3	3	3	40	10	50	20
05	5BVCGEC5	Communication Skills – V- Lab.	-	3	3	3	2	25	25	50	-
06	5BVCGEC6	Soft Skill Development – II- Lab.	-	3	3	3	2	25	25	50	-
07	5BVCFEM7	Automation in Farm Machinery- Lab.	-	4	4	4	3	25	25	50	-
08	5BVCFEM8	Machine Element- Lab.		4	4	4	3	25	25	50	
09	5BVCFEM9	Seminar & Project Phase - I	-	4	4	4	3	75	75	150	-
		Total	**12**	**18**	**30**	**30**		**335**	**215**	**550**	80

Note:
1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations.
One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

Farm Equipment & Machinery (Semester VI)

APPENDIX – F

General Education Component Credits : 12
Skill Development Component Credits : 18

Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme					
		Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
							External Marks	Internal Marks (IA)		Th.	Pr.
6BVCGEC1	Industrial Organization & Management	3	-	3	3	3	40	10	50	20	-
6BVCGEC2	Soft Skill Development – III	3	-	3	3	3	40	10	50	20	-
6BVCFEM3	CAD –CAM	3	-	3	3	3	40	10	50	20	-
6BVCFEM4	Mechatronics Engineering	3		3	3	3	40	10	50	20	
6BVCGEC5	Industrial Organization & Management-Lab.	-	3	3	3	2	25	25	50	-	20
6BVCGEC6	Soft Skill Development – III-Lab.	-	3	3	3	2	25	25	50	-	20
6BVCFEM7	CAD-CAM- Lab.	-	4	4	4	3	25	25	50	-	20
6BVCFEM8	Mechatronics Engineering- Lab.		4	4	4	3	25	25	50		20
6BVCFEM9	Project Phase – II	-	4	4	4	3	75	75	150	-	60
	Total	**12**	**18**	**30**	**30**		**335**	**215**	**550**	**80**	**140**

Note:
1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
TEACHING & EXAMINATION SCHEME
DIPLOMA (ONE YEAR), ADVANCE DIPLOMA (TWO YEARS), BACHELOR OF VOCATION (B.VOC)
(THREE YEARS DEGREE COURSE – SEMESTER PATTERN)

Vehicle Testing (Semester I)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – A

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min M
								External Marks	Internal Marks (IA)		Th
01	1BVCGEC1	Communication Skill – I	3	-	3	3	3	40	10	50	20
02	1BVCGEC2	Applied Computer Skill – I	3	-	3	3	3	40	10	50	20
03	1BVCVT3	Basic of Automobile-I	3	-	3	3	3	40	10	50	20
04	1BVCVT4	Workshop Technology-1	2	-	2	2	3	40	10	50	20
05	1BVCVT5	Basic of Vehicle Testing -1	3		3	3	3	40	10	50	20
06	1BVCGEC6	Communication Skills – 1- Lab.	-	3	3	3	2	25	25	50	-
07	1BVCGEC7	Applied Computer Skills – 1- Lab.	-	3	3	3	2	25	25	50	-
08	1BVCVT8	Basic Automobile-I-Lab.	-	3	3	3	3	25	25	50	-
09	1BVCVT9	Workshop Technology -1-Lab.	-	3	3	3	3	25	25	50	-
10	1BVCVT10	Basic of Vehicle Testing-1- Lab.		3	3	3	3	25	25	50	-
11	1BVCVT11	Field work/ Industrial visit	-	2	2	1			50	50	-
		Total	**14**	**17**	**31**	**30**		**325**	**225**	**550**	100

Notes:

1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

18 + 12
× 15 period. periods =
270 =
270 hrs.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
TEACHING & EXAMINATION SCHEME
DIPLOMA (ONE YEAR), ADVANCE DIPLOMA (TWO YEARS), BACHELOR OF VOCATION (B.VOC)
(THREE YEARS DEGREE COURSE – SEMESTER PATTERN)

Vehicle Testing (Semester II)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – B

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme					
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks (IA)		Th.	Pr.
1	2BVCGEC1	Communication Skill – II	3	-	3	3	3	40	10	50	20	-
2	2BVCGEC2	Applied Computer Skill – II	3	-	3	3	3	40	10	50	20	-
3	2BVCVT3	Basic of Automobile-II	3	-	3	3	3	40	10	50	20	-
4	2BVCVT4	Workshop Technology-II	2	-	2	2	3	40	10	50	20	-
5	2BVCVT5	Basic of Vehicle Testing –II	3		3	3	3	40	10	50	20	
6	2BVCGEC6	Communication Skills – II- Lab.	-	3	3	3	2	25	25	50	-	20
7	2BVCGEC7	Applied Computer Skills – II- Lab.	-	3	3	3	2	25	25	50	-	20
8	2BVCVT8	Basics of Automobile-II- Lab.	-	3	3	3	3	25	25	50	-	20
9	2BVCVT9	Workshop Technology –II-Lab.	-	3	3	3	3	25	25	50	-	20
10	2BVCVT10	Basic of Vehicle Testing-II- Lab.		3	3	3	3	25	25	50	-	20
11	2BVCVT11	Field work/ Industrial visit	-	2	2	1			50	50	-	20
		Total	**14**	**17**	**31**	**30**		**325**	**225**	**550**	**100**	**120**

Notes:

1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
TEACHING & EXAMINATION SCHEME
DIPLOMA (ONE YEAR), ADVANCE DIPLOMA (TWO YEARS), BACHELOR OF VOCATION (B.VOC)
(THREE YEARS DEGREE COURSE – SEMESTER PATTERN)

Vehicle Testing (Semester III)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – C

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Marks
								External Marks	Internal Marks (IA)		Th
01	3BVCGEC1	Communication Skill – III	3	-	3	3	3	40	10	50	20
02	3BVCGEC2	Applied Computer Skill – III	3	-	3	3	3	40	10	50	20
03	3BVCVT3	Engine system – I	3	-	3	3	3	40	10	50	20
04	3BVCVT4	Testing of Engine System – I	2	-	2	2	3	40	10	50	20
05	3BVCVT5	Mechatronics Engineering - I	3		3	3	3	40	10	50	20
06	3BVCGEC6	Communication Skills – III- Lab.	-	3	3	3	2	25	25	50	
07	3BVCGEC	Applied Computer Skills – III- Lab.	-	3	3	3	2	25	25	50	
08	3BVCVT8	Engine System – I- Lab.	-	3	3	3	3	25	25	50	
09	3BVCVT9	Testing of Engine System – I- Lab.	-	3	3	3	3	25	25	50	
10	3BVCVT10	Mechatronics Engineering – I-Lab.		3	3	3	3	25	25	50	
11	3BVCVT11	Field work/ Industrial visit	-	2	2	1			50	50	
		Total	**14**	**17**	**31**	**30**		**325**	**225**	**550**	100

Notes:

1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
TEACHING & EXAMINATION SCHEME
DIPLOMA (ONE YEAR), ADVANCE DIPLOMA (TWO YEARS), BACHELOR OF VOCATION (B.VOC)
(THREE YEARS DEGREE COURSE – SEMESTER PATTERN)

Vehicle Testing (Semester IV)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – D

Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme					
		Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
							External Marks	Internal Marks (IA)		Th.	Pr.
4BVCGEC1	Communication Skill – IV	3	-	3	3	3	40	10	50	20	-
4BVCGEC2	Soft Skill Development - I	3	-	3	3	3	40	10	50	20	-
4BVCVT3	Engine system – II	3	-	3	3	3	40	10	50	20	-
4BVCVT4	Testing of Engine System – II	2	-	2	2	3	40	10	50	20	-
4BVCVT5	~~Mechatronics~~ Electrical & ~~Engineering~~ - II Electronic System	3		3	3	3	40	10	50	20	
4BVCGEC6	Communication Skills – IV-Lab.	-	3	3	3	2	25	25	50	-	20
4BVCGEC7	Soft Skill Development –I-Lab.	-	3	3	3	2	25	25	50	-	20
4BVCVT8	Engine System – II-Lab.	-	3	3	3	3	25	25	50	-	20
4BVCVT9	Testing of Engine System – II- Lab.	-	3	3	3	3	25	25	50	-	20
4BVCVT10	of Mechatronics Engineering – II-Lab.		3	3	3	3	25	25	50	-	20
4BVCVT11	Field work/ Industrial visit	-	2	2	1			50	50	-	20
	Total	**14**	**17**	**31**	**30**		**325**	**225**	**550**	**100**	**120**

Notes:

1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
TEACHING & EXAMINATION SCHEME
DIPLOMA (ONE YEAR), ADVANCE DIPLOMA (TWO YEARS), BACHELOR OF VOCATION (B.VOC)
(THREE YEARS DEGREE COURSE – SEMESTER PATTERN)

Vehicle Testing (Semester V)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – E

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Pa. Marks
								External Marks	Internal Marks (IA)		Th.
01	5BVCGEC1	Communication Skills – V	3	-	3	3	3	40	10	50	20
02	5BVCGEC2	Soft Skill Development – II	3	-	3	3	3	40	10	50	20
03	5BVCVT3	~~Vehicle~~ System	3	-	3	3	3	40	10	50	20
04	5BVCVT4	~~Testing~~ ~~Vehicle~~ ~~System~~ – I	3		3	3	3	40	10	50	20
05	5BVCGEC5	Communication Skills – V- Lab.	-	3	3	3	2	25	25	50	-
06	5BVCGEC6	Soft Skill Development –II- Lab.	-	3	3	3	2	25	25	50	-
07	5BVCVT7	Vehicle ~~System~~ Lab.	-	4	4	4	3	25	25	50	-
08	5BVCVT8	~~Testing~~ Vehicle ~~System~~ – I- Lab.		4	4	4	3	25	25	50	
09	5BVCVT9	Seminar & Project Phase - I	-	4	4	4	3	75	75	150	-
		Total	**12**	**18**	**30**	**30**		**335**	**215**	**550**	80

Notes:

1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations.

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
TEACHING & EXAMINATION SCHEME
DIPLOMA (ONE YEAR), ADVANCE DIPLOMA (TWO YEARS), BACHELOR OF VOCATION (B.VOC)
(THREE YEARS DEGREE COURSE – SEMESTER PATTERN)

Vehicle Testing (Semester VI)

General Education Component Credits : 12
Skill Development Component Credits : 18

APPENDIX – F

Sr. No.	Sub. Code	Subjects	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme					
			Th.	Pr.	Total		Duration (Hrs)	Max. Marks		Total Marks	Min. Passing Marks	
								External Marks	Internal Marks (IA)		Th.	Pr.
01	6BVCGEC1	Industrial Organization & Management	3	-	3	3	3	40	10	50	20	-
02	6BVCGEC2	Soft Skill Development – III	3	-	3	3	3	40	10	50	20	-
03	6BVCVT3	~~Motor~~ Vehicle Rule (Vehicle System)	3	-	3	3	3	40	10	50	20	-
04	6BVCVT4	~~Testing of Vehicle System – II~~ (Supervisory Skill II)	3		3	3	3	40	10	50	20	
05	6BVCGEC5	Industrial Organization & Management-Lab.	-	3	3	3	2	25	25	50	-	20
06	6BVCGEC6	Soft Skill Development – III-Lab.	-	3	3	3	2	25	25	50	-	20
07	6BVCVT7	~~Motor Vehicle Rule~~-Lab. (Vehicle Systems)	-	4	4	4	3	25	25	50	-	20
08	6BVCVT8	~~Testing of Vehicle System~~ - II – Lab. (Supervisory Skill II)		4	4	4	3	25	25	50		20
09	6BVCVT9	Project Phase – II	-	4	4	4	3	75	75	150	-	60
		Total	**12**	**18**	**30**	**30**		**335**	**215**	**550**	**80**	**140**

Notes:

1. Th = Theory; Practical; WS-Workshop/LB=Labs/FW-Field Work/ IA=Internal Assessment
2. Minimum marks for passing will be 40% of the total marks allotted to that paper/practical.
3. Credit \Calculations

One credit would mean equivalent of 15 periods of 60 minutes each, for Theory & Practical.
For internship / field work, the Credit Weight age for equivalent hours shall be 50% of that for lectures.
The Strength of Batch of Practical/Workshop/internship/Field visit/Production for Under Graduates classes shall be 16 with an additional; of 10% with the permission of Hon'ble Vice-Chancellor.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBED FOR FARM EQUIPMENT & MACHINERY
B.VOC. PART – I (VOCATION)
SEMESTER – I
SUBJECT CODE: 1BVCGEC1 & 1BVCGEC6 ENGLISH AND COMMUNICATIONS SKILL-1

Unit 1
Revisiting English Grammar: articles, prepositions, adjectives

Unit 2
Written Communication: letter writing (customer complaints, general complaints, seeking information, placing orders)

Unit 3
Reading Skills: scanning and skimming, reading comprehension, summarizing

Unit 4
Communication Skills: language functions (greeting, taking leave, thanking, apologizing, introducing self)

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:
Bhaskaran & Horsburgh. *Strengthen Your English*. OUP (Unit 1)
Patil, Valke, Thorat & Merchant. *English for Practical Purposes*. Macmillan (Unit 2, 3& 4)
Dwivedi & Kumar. *Macmillan Foundation English*. Macmillan

SUBJECT CODE: 1BVCGEC2 & 1BVCGEC7 APPLIED COMPUTER SKILL-I

Unit I

Word Processing

Introduction, Starting word, Creating document, Structure of Ms-word window and its application, Mouse & keyboard operations, designing a document; formatting-selection, cut, copy, paste, Toolbars, operating on text; Printing, Saving, Opening, Closing of document; creating a template

Unit II :

Tables, borders, textbox operations; Spelling and Grammar check, Mail merge, Envelope and Label, Protection of document, Change the view of document.

Unit III

PowerPoint Presentation-Working with PowerPoint Window, Standard Toolbar, Formatting Toolbar, Drawing Toolbar, Moving the Frame, Inserting Clip Art, Picture, Slide; Text Styling, Send to Back.

Unit IV Entering Data to Graph, Organization Chart, Table, Design Template, Master Slide, Animation Setting, Saving and Presentation, Auto Content Wizard, Package for CD (Pack & Go Feature).

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference Books:
1. Information technology concepts by Dr. Madhulika Jain, Shashank & Satish Jain, [BPB Publication, New Delhi.]
2. Fundamentals of Information Technology By Alexis And Mathews Leon
[Leon Press, Chennai & Vikas Publishing House Pvt Ltd, New Delhi]
3. Computer Fundamentals by P. K. Sinha

SUBJECT CODE: 1BVCFEM 3 & 1BVCFEM 8 BASICS OF AUTOMOBILE-1

Course Content Theory:

Unit -1 **History of Automobile**: - Indian and worlds leading Automobile Industries, history and development, ntroduction to various Indian manufacturer.

Unit -2 **Classification of Automobile** General classification of automobiles, Components of automobile vehicle

Unit-3 **Engine and its components**. Construction and working principle of I.C engine, classification of I.C engine

Unit-4 **Construction and working**: Two stroke petrol engine & four stroke petrol/Diesel

Practical:-

1. Two stroke petrol engine & four stroke petrol/Diesel engine
2. Demonstration of various automobile parts used in Two wheeler, Three wheeler, Four wheeler their basic construction & location etc.
3. Demonstration of various engine components their function, construction location, material etc Sketch Various engine components.
4. Demonstration on working of two strokes and four stroke engine on cut section Model (petrol & diesel also used of)

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.

SUBJECT CODE: 1BVCFEM 4 & 1BVCFEM 9 WORKSHOP TECHNOLOGY-1

Course Content Theory:-

Unit -1 **Workshop Basics**
Introduction of work shop, work shop ethics, discipline, safety precaution, elementary first aid, workshop 5's' techniques.

Unit -2 **Workshop Tools** Introduction and use of various tools and equipment used in work shop.
General tools : - Hammer, Chisels, Hacksaw frame, Screw driver, Punches, Pliers,Files, Spanner, Allen set
Special tools: - Taps Dies, Reamers, and Scrapper etc.

Unit-3 **Measuring tools:** - Inside caliper, outside caliper, Vernier caliper (Inside/Outside), MicrometerInside/Outside Height gauge, Try square, Feeler gauge, Taco meter, AVO meter etc.
Marking Tools: - Surface plate, Angle plate, Scribing block, Height gauge, Dial indicator, 'V' Block etc

Unit-4 **Automobile Tools** Introduction and use of various Automobile tools & equipments: - Mechanical & Hydraulic Jack, Piston ring compressor, Piston ring expander, Stud extractor, Valve spring lifter, Tap extractor, Pullers pliers, Filter wrench, Torque wrench, Battery tester, Growler, Hydrometer.

Practical:-

1. Introduction to the work shop , types of work done in work shop , job opportunity (Organization chart with and responsibility)
2. Practice on health & safety - importance of safety precaution, Shoes, Dressing, safety symbol, and safety equipments. Practice on how to use first aid & fire extinguishers.
3. Practice on 5.s technique
4. Demonstration on how to use various tools used in work shop, their free hand sketching. General tools – Measuring tools, marking tools, Special tools.
5. Demonstration on how to use various tools used in work shop, their free hand sketching. Measuring tools, marking tools.
6. Demonstration on how to use various Tools and equipments used in two wheeler garage , Tools and equipments used in four wheeler garage
7. Practice on checking the battery for charging, connecting the battery for charging
8. Demonstration on painting equipments, coating and polishing.

References:-

1) Workshop technology –Vol-1 S.K Hajra Choudary ,- A.K Hajra Choudary , Nirjhar Roy -Media Promote publication pvt Ltd
2) Workshop technology –Vol-2 S.K Hajra Choudary ,- A.K Hajra Choudary , Nirjhar Roy -Media Promote publication pvt Ltd
3) Workshop technology –Vol-1 B.S Raghuwanshi Dhanpatrai Publication
4) Workshop technology –Vol -2 B.S Raghuwanshi , Dhanpatrai Publication
5) Workshop technology -1 S R. Raghuwanshi,V.B kulkarni, V.NDas Pute,H.S Pawar, S.S patil –Director of Vocational & training Mumbai.

SUBJECT CODE: 1BVCFEM5 & 1BVCFEM10 FARM TRACTOR -1

Course Content Theory:-

Unit -1 **Farm Tractor:** Introduction, basic of Tractor as major farm equipment, Types of Tractors, Selection of tractor on the basics of power, on base of techno-Commercial Aspects.

Unit -2 **Tractor Layout & Components** :Tractor layout basics, General consideration of Tractor, Main parts & Components of Tractor, Function of each part, Electrical & Electronic system , tractor mounting and accessories , Farm implement & safety devices for tractors.

Unit-3 **Tractor Engine & its component** Different components of Engine, Engine study & its performance Direct & indirect injection chamber, Valve mechanisms, firing Order. Propeller shaft.

Unit-4 **Ignition System:** Requirements of ignition, battery coil ignition wiring system, magneto ignition systems, comparison.

PracticalS:-

1. Industrial Visit /Dealer /Agency report preparation for technology commercial aspect Tractor showroom.
2. Study & Demonstration of layout of a Tractor.
3. Dismantling of Tractor Engine to Study its components.
4. Study & Demonstration of Gear box of a Tractor.
5. Study & Demonstration of Steering Mechanism of a Tractor.
6. Study & Demonstration of Suspension System of a Tractor.
7. Study and Demonstration of Differential of a Tractor.
8. Study and Demonstration of Clutches of a Tractor.
9. Study and Demonstration of Brakes of a Tractor.

References:-

1. Farm Tractor maintenance and Repair Jain, S.C. and C.R. Rai. 1999. Standard Publishers and distributors New Delhi.
2. Tractors and their Power Units. Barger, E.L., J.B. Liljedahl and E.C. McKibben, 1997 Wiley Eastern Pvt. Ltd., New Delhi.
3. A course of in internal combustion engines. Domkundwar A.V. 1999. Dhanpat Rai & Co. (P) Ltd., Education and technical Publisher Delhi.
4. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technician- State Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyderabad.

SUBJECT CODE: 1BVCFEM11 FIELD WORK/INDUSTRIAL VISIT

Visit to any farm equipment & manufacturing industry / workshop / college / university / technical expo / international & national exhibitions.

Report writing based on the above work.

Assessment done on the basis of via-voc and report by the teaching faculty.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBE FOR GENERAL EDUCATION COMPONENT

B.VOC. PART – I (VOCATION)

SEMESTER – II

SUBJECT CODE: 2BVCGEC1 & 2BVCGEC6 ENGLISH AND COMMUNICATION SKILL-II

Unit 1

Revisiting English Grammar: modal auxiliaries, adverbs and adverbial phrases

Unit 2

Written Communication: job applications, resumes, responding to advertisements

Unit 3

Reading Skills: Note making, distinguishing facts from beliefs, opinions

Unit 4

Communication Skills: language functions (asking for information, requesting , agreeing and disagreeing, complimenting and responding to compliments)

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:

1. Bhaskaran & Horsburgh. *Strengthen Your English*. OUP (Unit 1)
2. Patil, Valke, Thorat & Merchant. *English for Practical Purposes*. Macmillan (Unit 2, 3 & 4)
3. Dwivedi & Kumar. *Macmillan Foundation English*. Macmillan

SUBJECT CODE: 2BVCGEC2 & 2BVCGEC7 APPLIED COMPUTER SKILL-II

Spreadsheet Package

Unit I:

Introduction To Ms-Excel, Navigating, Excel Toolbars and Operations, Formatting Features, Copying Data Between Worksheets; Entering and Editing Cell Entries, Creation of Charts, Editing and Formatting Charts

Unit II:

Goal Seek, Auditing, Linking, Workbook, Database in Excel (Auto Filter, Advanced Filter, Set Form), Mathematical, Statistical and Financial Functions in Ms-Excel.

Unit III:

MS-Access- Introduction to database management system, DBMS vs RDBMS

Unit IV:

Database Administrator (DBA) and its role.

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference Book:

1. Data Base System Concepts By A SilbersChatz By Henry Korth And S.Sudarshan [Megraw-Hill ltd. New Delhi] 3rd Edition.
2. Introduction to Data Base Management by NAVEEN PRAKASH [Tata McGrawHill ltd.]
3. Bipin C. Desai, An Introduction to Database Systems, Galgotia Publications.
4. Raghu Ramakrishnan & Johannes Gerhrke, "Data Base Management Systems", Mc Graw Hill International Edition, 2000

SUBJECT CODE: 2BVCFEM3 & 2BVCFEM8 BASICS OF AUTOMOBILE-2

Course Content Theory:-

Unit -1 **Farm Automobile Specification**
Technical Specification Details Vehicle specification, engine specification Technical details included in owners and service manual. Work, power, energy, efficiency, bore, stroke, displacement, compression ratio, IHP, BHP.

Unit -2 **Automobile Electrical System:** Basic concept of electricity. Current, Ampere, Volt, Resistance, Ohm law, potential difference, parallel circuit, series circuits, Wiring in farm automobile

Unit-3 **Automobile Cooling**, Lubrications fuel & specifications Classification, properties & Uses of coolants, viscosity, material properties

Unit-4 **Classification of automobiles:** Two & Four stroke engines, Diesel & petrol engine, maintenance, Engine parts & its study

PracticalS:-

1. Collection of vehicle information broacher from authorized dealer and prepare chart on technical details.
2. Prepare chart of various two and four wheeler dealers available in city-Dealer name, address, contact number, manufacturer details and their various Models.
3. Study on service manual on any one automobile vehicle model.
4. Study of electrical circuit - parallel and series.
5. Practice on using various electrical measuring equipment.
6. Visit to automobile garages/ automobile industries.
7. Study of various four stoke engine.

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.
6) Automotive Electrical Equipment – P.L. Kohli - Tata McGraw Hill Tenth edition.
7) Automotive Mechanics – S.Shrinivasan - Tata McGraw Hill Second edition.
8) Automobile Engineering – R.B. Gupta – Satyaprakashan.
9) Automobile Engineering Volume 1 – K.M. Gupta – Umesh Publication.
10) Automobile Engineering Volume 2 – K.M. Gupta – Umesh Publication.

SUBJECT CODE: 2BVCFEM4 & 2BVCFEM9 WORKSHOP TECHNOLOGY-2

Course Content Theory:-

Unit No. 1: Introduction of General machineries: Introduction, working, Construction and use of machines: - Lath, Milling, Shaper, Drill, Grinding.
Unit No. 2 :Air Compressor, Fly press, Pipe bending M/c, Wheel aliment M/c, Wheel balancer M/c, Fuel Injection pump testing bench, Tyre changer M/c, Tyre inflection M/c, Decarburizing M/c etc.
Unit No. 3 : Introduction to Welding Welding M/c (Arc/Gas), Soldering and Brazing, Thermit welding TIG MIG & its applications
Unit No. 4 : Manufacturing process heat treatment: Plating, Casting, Defects, Forging, Hot and cold rolling, Extrusion.

Practicals:-

1. machine used in Demonstration on various automobile industries - Compressor, Drilling, Grinding, Welding (Arc & Gas), Hand Operated & Hydraulic Operated Press, lathe, milling, shaper machine, crank shaft grinding, cylinder boring, cylinder head refacing, honing, Wheel Alignment, Tyre changer, Wheel balancing M/c.
2. Demonstration of Decarburizing Process, smoke tester, FI pump testing, car washing, hydraulic hoist, air compressor etc.
3. Study of Wheel alignment by visiting Wheel balancing center
4. Preparation of any job on welding process using any type of welding
5. Demonstration on various heat treatment Process on Automobile parts.
6. Study of casting & forging products.
7. Visit to Garage for usage of Tools & Equipments Used in two, three and four wheeler garage. Various automobile dealers/ authorized work shop. Automobile Industry/ Automobile components manufacturing industries.

References;-

1) Workshop technology –Vol-1 S.K Hajra Choudary ,- A.K Hajra Choudary , Nirjhar Roy -Media Promot... publication pvt Ltd
2) Workshop technology –Vol-2 S.K Hajra Choudary ,- A.K Hajra Choudary , Nirjhar Roy -Media Promo... publication pvt Ltd
3) Workshop technology –Vol-1 B.S Raghuwanshi Dhanpatrai Publication
4) Workshop technology –Vol -2 B.S Raghuwanshi , Dhanpatrai Publication
Workshop technology -1 S R. Raghuwanshi,V.B kulkarni, V.NDas Pute,H.S Pawar, S.S patil – Direc... Vocational & training Mumbai.

SUBJECT CODE: 2BVCFEM5 & 2BVCFEM10 FARM TRACTOR -2

Course Content Theory:-

Unit No. 1 **Tractor Transmission System:**

Introduction Transmission systems: Clutches & its types Gearboxes, Differential unit, final converter, drives, propeller shaft.

Unit No. 2 **Tractor Steering System**

Introduction steering mechanism, types of steering gear box, front axle adjustment, Brakes & its types

Unit No. 3 **Suspension systems**

Shock absorbers, constructional & characteristics of leaf spring, coil spring & torsion bar. Independen... system, Pneumatic & hydraulic suspension, Study of shock absorbers.

Unit No. 4 **Hydraulic System of Tractors**

Working principle of hydraulic system Relief Valve, Cylinder Control valve. Filter or strainer

Practicals:-

1. Dismantling of Tractor Engine to Study its components
2. Study & Demonstration of Gear box of a Tractor.
3. Study & Demonstration of Steering Mechanism of a Tractor of a Tractor.
4. Study and Demonstration of Clutches of a Tractor.
5. Study and Demonstration of Brakes of a Tractor.
6. Study & Demonstration of Suspension System of a Tractor.
7. Study and Demonstration of Differential
8. Study of hydraulic system

References:-

1. Farm Tractor maintenance and Repair Jain, S.C. and C.R. Rai. 1999. Standard Publishers and distribu... Delhi.
2. Tractors and their Power Units. Barger, E.L., J.B. Liljedahl and E.C. McKibben, 1997 Wiley Eastern ... Delhi.
3. A course of in internal combustion engines. Domkundwar A.V. 1999. Dhanpat Rai & Co. (P) Ltd., E... technical Publisher Delhi.
4. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Techn... Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh. Hyd...
5. Automobile Engineering; R.K. Raj put; Laxmi Publications, New Delhi

SUBJECT CODE: 2BVCFEM11 FIELD WORK/INDUSTRIAL VISIT

Visit to any farm equipment & manufacturing industry / workshop / college / university / technical expo / in... national exhibitions.
Report writing based on the above work.
Assessment done on the basis of via-voc and report by the teaching faculty.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBED FOR GENERAL EDUCATION COMPONENT
B.VOC. PART – II (VOCATION)
SEMESTER – III

SUBJECT CODE: 3BVCGEC1 & 3BVCGEC6 ENGLISH AND COMMUNICATIONS SKILL-III

Unit 1

Revisiting English Grammar: Forming questions, using conditionals, question tags

Unit 2

Writing Skills: Paragraph writing, writing newspaper reports

Unit 3

Comprehension Skills: converting verbal information into non-verbal and vice-versa, interpreting graphs, charts and diagrams

Unit 4

Communication Skills: short situational conversations, self-introduction, short talks

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:

1. Bhaskaran & Horsburgh. *Strengthen Your English*. OUP (Unit 1)
2. Patil, Valke, Thorat & Merchant. *English for Practical Purposes*. Macmillan (Unit 2& 3)
3. Dwivedi & Kumar. *Macmillan Foundation English*. Macmillan

Taylor, Grant. *English Conversational Practice*. Tata McGraw-Hill

SUBJECT CODE: 3BVCGEC2 & 3BVCGEC7 APPLIED COMPUTER SKILL-III

Unit-I:

MIS- Systems Concepts - Systems approach, characteristics, Types of Systems; Elements – input, Output, environment, Boundary Interface, Feedback & Control

Unit II:

Systems Life Cycle; MIS, TPS, OAS,DSS,KWS, Value of information, information life cycle, data Vs information, Components of MIS, characteristics of MIS.

Unit III:

System Analysis & Design: System development life cycle. Modeling the required system,

Unit IV:

E-R diagrams, ELHs, ECDs, user view of processing, modeling input output data.

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:

- ✓ Microsoft Office –2008 – Gini Courter , Annelte Marquis BPB
- ✓ It Today (Encyclopedia) - S. Jaiswal
- ✓ A First Course In Computers – Sanjay Saxena
- ✓ First Text Book On Information Technology – Srikant Patnaik
- ✓ Guide To Microsoft Access – Carl Townsand
- ✓ An Introduction To Database Management System – Bipin C. Desai (Galgotia Pub.)
- ✓ Database Management Design – CSV Murthy (Himalaya)
- ✓ Management Information System - Goyal
  Management Information System : Jawadekar (TMH)

SUBJECT CODE: 3BVCFEM3 & 3BVCFEM8 FARM EQUIPMENT & MACHINERY -I

Course Content Theory:-

Unit No. 1 **Farm Equipment's**

Introduction to farm mechanization, scope Classification of farm machines, working attachment of tracto Classification-Auxiliary equipment – Trailers and body tipping mechanism.

Unit No. 2 **Working and construction of different equipments:**

Implements for intercultural operations, planters, paddy translators; for land development and soil co

Unit No. 3 **Farm Machinery**

Classification of farm machines, elements of farm machinery, selection of machinery used for pro crops, tiller, special features.

Unit No. 4 **Servicing & Repairing Farm equipment & machinery -I:**

Checking vehicle for repair, General vehicle service & routine maintenance checks. Fault tracing, va tractors tools, tractor dismantling, engine stripping, vehicle peripherals & reassembly. Job card Preparation.

Practicals:-

1. Study of working attachment of tractors
2. Study of planters.
3. Industrial Visit to demonstrate Equipment for land development and soil conservation.
4. Study of selection criteria of farm machinery.
5. Visits to any authorized service station/center/garage/workshop preparing job cards.

Reference:-

1. Bosoi, E.S. (1990), Theory, Construction & calculation of agricultural machines. (Vol. 1 & 2). Oxonion Pre Ltd., New Delhi.
2. Practical Agricultural Engineering – Ghosh, P.K. & Swains. (1993) Nay Prakash, Calcutta.
3. Elements of Farm Machinery – Shrivastava, A.C. (1990) Oxford & IBH Publication Co. Pvt. Ltd. New De
4. Principals of Farm Machinery, Kepner, R.A., Bainer Roy, and Barges, E.C. (1978) CBS Publishers and Di Delhi-17.
5. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technicia Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyderab

SUBJECT CODE: 3BVCFEM4 & 3BVCFEM9 FARM MACHINERY & TESTING -1

Course Content Theory:-

Unit No. 1: Measuring & Testing Instruments -I:

Basic testing tools for repairing & maintenance work their function, specification, study of various types testing equipments. Typical motor vehicle measurement & electrical test meters. Meters & Switches.

Unit No. 2 : Servicing & Repairing farm equipment & machinery -II:

Servicing for basics performance haulage farm operations, Steering, brakes Clutch & Hydraulic Testing

Unit No. 3 : Power Tiller & Tractor Testing

Introduction power tiller Need for testing & evaluation of farm tractor, Types of test procedure, test performance of tractor & power tiller.

Practicals:-

1. Demonstration various testing and measuring instruments.
2. Study of hydraulic system for tractor.
3. Visit to workshop for study of hydraulic testing linkage operation.
4. Study of Rotary Tiller.

Reference:-

1. Farm Tractor maintenance and Repair. Jain, S.C. and C.R. Rai. 1999 Standard publishers and distributors, New Delhi.
2. Tractors and the power units. Barger, E.L. Liljedahl and E.C. McKibben. 1997. Wiley Eastern Pvt. Ltd., New Delhi.
3. Indian Standard Codes for agriculture. Implements. Published by ISI, New Delhi.
4. Practical Agricultural Engineering – Ghosh, P.K. & Swain, S. (1993) Nay Prakash, Calcutta.
5. Elements of Farm Machinery – Shrivastava, A.C. (1990) Oxford & IBH Publication Co. Pvt. Ltd. New Delhi.
6. Principals of Farm Machinery, Kepner, R.A., Bainer Roy, and Barges, E.C. (1978) CBS Publishers and Distributors, Delhi-17.
7. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technician- State Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyderabad.

SUBJECT CODE: 3BVCFEM5 & 3BVCFEM10 FARM MACHINERY ELECTRICAL SYSTEM

Course Content Theory:-

Unit No. 1 **Basic of Electrical System**

Introduction, Study of electrical, basics of systems & principles. Ampere meter, hour gauge.

Unit No. 2 **Ignition system**

Study of The ignition system is classified as (I) Battery-ignition systems, Careful Study of Wiring of magnet ignition (ii) Magneto-ignition system Comparison of Battery ignition and Magneto ignition system.

Unit No. 3 **Battery System**

Introduction Battery, lead acid battery, Capacity, principles & operations, charging Systems, dry charged battery. Battery testing.

Unit No 4 **Dynamo & Alternator:** introduction, principle, Current & voltage regulator, purpose & principle of alternator

Practicals:-

1. Study of faults in the electrical systems such as Head lights, side of Parking lights, Trafficator lights, electric horn system, Windscreen wiper system, Starter system & charging system.
2. Demonstration Adjustment of Head light.
3. Demonstration of electrical system and electrical circuits.
4. Charging of the battery. Testing of the battery.
5. Overhauling of the complete electrical circuit and reinstalling the wiring system.

References:-

1. Automotive electrical equipment P.L. Kohli Tata McGraw Hill.
2. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technician- State Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyderabad.
3. Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
4. Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
5. Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
6. Electrical Engineering B.L. Thereja (Volume 1 & 2) Tata McGraw Hill.

SUBJECT CODE: 3BVCFEM11 FIELD WORK/INDUSTRIAL VISIT

Visit to any farm equipment & manufacturing industry / workshop / college / university / technical expo / international & national exhibitions.
Report writing based on the above work.
Assessment done on the basis of via-voc and report by the teaching faculty.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBED FOR GENERAL EDUCATION COMPONENT
B.VOC. PART – II (VOCATION)
SEMESTER – IV

SUBJECT CODE: 4BVCGEC1 & 4BVCGEC6 ENGLISH AND COMMUNICATION

Unit 1

Grammar: Use of modal auxiliaries, use of passive voice

Unit 2

Writing: summarizing articles and passages, writing short reviews

Unit 3

Vocabulary: synonyms, antonyms, idioms and phrases, converting idiomatic into plain English and vice versa

Unit 4

Communication Skills: group discussion, short presentations

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:

1. Narayanswamy, K. R. *Success with Grammar and Composition*. Orient Longman (Unit 1 & 2)
2. Dwivedi & Kumar. *Macmillan Foundation English*. Macmillan (Unit 3)
3. Bhaskaran & Horsburgh. *Strengthen Your English*. OUP (Unit 2)
4. Patil, Valke, Thorat& Merchant. *English for Practical Purposes*. Macmillan (Unit 2)
5. Taylor, Grant. *English Conversational Practice*. Tata McGraw-Hill.

SUBJECT CODE: 4BVCGEC2 & 4BVCGEC7 SOFT SKILL DEVELOPMENT-I

Unit I:

Introduction to business communication, Introduction to sound system of English, Introduction to effective writin non verbal communication.

Unit II:

The self concept, Self management techniques. Self image and self esteem, Building self confidence, Personal planning and success attitude, creating the master plan, active positive visualization and positive attitude, Spot analysis.

Unit III:

Self motivation & communication:

Levels of motivation, power of irresistible enthusiasm, etiquettes and manners in a group, public speaking, oral written communication, Body language, Importance of listening and responding, Tips for technical writing

Unit IV

Etiquettes: office etiquettes, email etiquettes, telephone etiquettes, goal setting and time managements.

Team dynamics: Introduction to team work, working in teams, personal attitude, conflicts and its resolutions assertiveness, diversity, Role of career planning in personality development, How to face personal interviews group discussions.

Note:
Self paced learning
Industry Awareness
Assignments and Discussions

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference Book:

Personality Development by Rajiv K. Mishra. Rupa &.Co.

SUBJECT CODE: 4BVCFEM4 & 4BVCFEM9 FARM EQUIPMENT & MACHINERY - 2

Course Content Theory:-

Unit No. 1: Seeding Machinery

Methods sowing or seeding, Seed drill, Seed cum fertilizer drill equipment, components, calibration of seed drill.

Unit No. 2 : Cooling System:

Introduction to Cooling system, Requirements of Cooling system, type's coolants – Classification – Liquid cooling system, Radiators, purpose of lubrication, selection of lubricants. Viscosity temperature effects.

Unit No. 3 : Tillage

Introduction, Function & objective of tillage, Classification of tillage, types of tillage, Primary & secondary tillage implements.

Unit No. 4 : Cultivator

Introduction, Function & objective of cultivator, Classification of cultivator, types of tillage, implements Cultivators design.

Practicals:-

1. Study of Calibration of seed drill equipment.
2. Study of seed cum fertilizer drill equipment.
3. Study of radiators.
4. Calculating the viscosity of coolants.
5. Gravity test, color test of lubricants.
6. Study of primary tillage equipment.
7. Study of secondary tillage.
8. Study of cultivators.

References:-

1. Bosoi, E.S. (1990), Theory, Construction & calculation of agricultural machines. (Vol. 1 & 2). Ox onion Press Pvt. Ltd., New Delhi.
2. Practical Agricultural Engineering – Ghosh, P.K. & Swain, S. (1993) Nay Prakash, Calcutta.
3. Elements of Farm Machinery – Shrivastava, A.C. (1990) Oxford & IBH Publication Co. Pvt. Ltd. New Delhi.
4. Principals of Farm Machinery, Kepner, R.A., Bainer Roy, and Barges, E.C. (1978) CBS Publishers and Distributors, Delhi-17.
5. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technician- State Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyderabad.

SUBJECT CODE: 4BVCFEM3 & 4BVCFEM8 FARM MACHINERY & TESTING - 2

Course Content Theory:-

Unit No. 1: Measuring & Testing Instruments -I:

Basic testing tools for repairing & maintenance work their function, specification, study of various types of testing equipments. Typical motor vehicle measurement & electrical test meters. Meters & Switches.

Unit No.: 2 Servicing & Repairing farm equipment & machinery -II:

Servicing for basics performance haulage farm operations, Steering, Clutch & Hydraulic Testing.

Unit No.: 3 Power Tiller & Tractor Testing

Introduction power tiller Need for testing & evaluation of farm tractor, Types of test procedure, test performance of tractor & power tiller.

Unit No. 4 : Servicing & Repairing farm equipment & machinery:

Servicing for basics performance haulage farm operations, Breaks, brakes & Tractor Power Output shaft

Practicals:-

1. Demonstration various testing and measuring instruments.
2. Study of hydraulic system for tractor.
3. Visit to workshop for study of hydraulic testing linkage operation.
4. Study of Rotary Tiller.

References:-

1. Farm Tractor maintenance and Repair. Jain, S.C. and C.R. Rai. 1999 Standard publishers and distribu Delhi.
2. Tractors and the power units. Barger, E.L. Liljedahl and E.C. McKibben. 1997. Wiley Eastern Pvt. Ltd., N
3. Indian Standard Codes for agril. Implements. Published by ISI, New Delhi.
4. Practical Agricultural Engineering – Ghosh, P.K. & Swain,S. (1993) Nay Prakash, Calcutta.
5. Elements of Farm Machinery – Shrivastava, A.C. (1990) Oxford & IBH Publication Co. Pvt. Ltd. New D
6. Principals of Farm Machinery, Kepner, R.A., Bainer Roy, and Barges, E.C. (1978) CBS Publishers and D Delhi-17.
7. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technici Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyder

SUBJECT CODE: 4BVCFEM5 & 4BVCFEM10 FARM MACHINERY ELECTRONIC SYSTEM

Course Content Theory:-

Unit No. 1 : Introduction Electronic basics Farm metering Diode, transistors, resrsitors.

Unit No. 2 : Principles of Electronic ignition spark Ignition, Pulse Generator.

Unit No. 3 : Auxiliary electronic system for farm mechanization sensors.

Unit No. 4 : Introduction to light, Theory of Light, Polarization, Polaroid Optical device horn System.

Practicals:-

1. Study of faults in the electrical systems such as Head lights, side of Parking lights, Trafficator lights, electric horn system.
2. Windscreen wiper system, Starter system & charging system.
3. Adjustment of Electronic ignition system.
4. Study of faults in the electronic systems such sensors used modern farm machinery.

References:-

1. Salivahanan. S., N Suresh Kumar and A. Vallavaraj, 2006 Electronic Devices and Circuits. Tata McGraw-Hill Publishing Company Limited, New Delhi.
2. Ernest O. Doebelin, 1990. Measurement System – Application and Design. McGraw-Hill Publishing Company, London.
3. Gupta. B.R., 1999.Electronicsand Instrumentation Second Edition. Wheeler Publishing, New Delhi.
4. Singh.S.K. 2005. Industrial Instrumentation and Control, Second Edition. Tata McGraw-Hill Publishing Company Limited, New Delhi.
5. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technician- State Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyderabad.

SUBJECT CODE: 4BVCFEM11 FIELD WORK/INDUSTRIAL VISIT

Visit to any farm equipment & manufacturing industry / workshop / college / university / technical expo / international & national exhibitions.

Report writing based on the above work.

Assessment done on the basis of via-voc and report by the teaching faculty.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBED FOR GENERAL EDUCATION COMPONENT
B.VOC. PART – III (VOCATION)
SEMESTER – V

SUBJECT CODE: 5BVCGEC1 & 5BVCGEC5 ENGLISH AND COMMUNICATIONS SKI

Unit I

Grammar: Sentence expansion, use of clauses, sentence linkers

Unit 2

Writing: Notices, minutes of meetings or programmes

Unit 3

Reading: Comprehension of short literary passages, interpretation skills

Unit 4

Communication Skills: interviews techniques, preparing and making presentations

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:

1. Narayanswamy, K. R. *Success with Grammar and Composition.* Orient Longman (Unit 1)
2. Dwivedi & Kumar. *Macmillan Foundation English.* Macmillan
3. Bhaskaran & Horsburgh. *Strengthen Your English.* OUP
4. Patil, Valke, Thorat & Merchant. *English for Practical Purposes.* Macmillan (Unit 2)
5. Taylor, Grant. *English Conversational Practice.* Tata McGraw-Hill.

SUBJECT CODE: 5BVCGEC2 & 5BVCGEC6 SOFT SKILL DEVELOPMENT- II

Unit I

Objectives, Introduction, Concept, Nature and Dimensions of Stress

Unit II

Stress : Its Effects, Causes and Ways of Coping, What is pressure and what is stress, The three stages of burnout, Recognizing your own stressors, Personality types and reactions to stress, How your beliefs and perceptions cause stress.

Unit III

Managing Yourself: Does your job cause stress?, Five ways to battle job stress, Developing a strategy for stress management, Self-management, Managing Change, Relaxation techniques, Assertiveness skills, Stress and Faith Healing

Unit IV

Common Meditation Techniques:

1. Positive Forces of Nature
2. Relaxation BY Music
3. Exercise , yoga and meditation

Planning your next steps.

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference books:

Title: Stress Management **Publisher:** Himalaya **Author:** Dr Satish Pai, Dr S Ravishankar, Dr H L Kaila, Shri S V Kamat **Edition:** Students Edition

SUBJECT CODE: 5BVCGEC3 & 5BVCGEC7 AUTOMATION IN FARM & MACHINERY

Course Content Theory:-

Unit No. 1 : Automation & Types, Automation of continuous processing systems. Methods of work part transport, transfer mechanisms, control function.

Unit No. 2 : GROUP TECHNOLOGY AND PROCESS PLANNING: Introduction- Part families, part Classification and coding systems, Group technology machine cells, advantage of group Technology,

Unit No. 3 : FMS: Introduction, schematic of FMS, FMS cells, Components of FMS. Relation of Group Technology with FMS. Applications of FMS. Material handling: Automated Guided Vehicles (AGV) etc.

Unit No. 4 : Robotics, Future automated farm manufacturing factories.

Practical:-

1. Visit to any industry farm equipment manufacturing /Automation/Robotics/automated factories/Workshop.

References:-

1. Automotive Mechanics-William Crouse-Donald L. Anglin. Tata McGraw Hill tenth edition.
2. Mickel & Grover advance manufacturing Tata McGraw Hill.
3. Production technology volume 1 & 2O.P. Khanna –Dhanpat Ray & Sons, New Delhi.
4. Production System, Automation and CIM; Mikhal Groover; Pearson Publications.
5. CNC Machines; M. Dothan & B.S.Pabla; New Age International

SUBJECT CODE: 5BVCGEC4 & 5BVCGEC8 MACHINE ELEMENTS

Unit I: - Shaft: Material, Strength considering shaft subjected to - Twisting, bending moment **Key** - types, strength of key **Coupling** - types, requirements of good couplings,

Unit II: - Bearings: Types of bearing, designations, life of bearings, selection of bearings, lubrication, mounting and enclosure.

Unit –III :

a) Belts- **Flat belts** -types, material and construction of belt, types of drives **V-Belts** -Construction and types.

b) **Wire Rope** -Selection, Construction, classification, designations, Selection of wire rope for given loads.

Unit III: - Gears –Introduction, law of gearing

a) Spur gear –b) Helical gear -c) Bevel gear- D) Worm gear -.

Practicals:-

All sheets A-4 size only

1) Sheet 1: Study of types of shaft
2) Sheet 2: Coupling or any one type of gears.
3) Sheet 3: I.C.Engine part (any one based on syllabus)
4) Sheet 4. Types Bearings
5) Sheet 5 -Types belts & ropes

Reference Books :

1) Machine Design fundamentals –Mechanical designer workbook, J.E.Shigley, Published by Mc Graw hill.
2) Machine Design, R.S.Khurmi and Gupta J.K., Published by Eurasia Publisher's-N Delhi.
3) Design Data Book by Mahadevan,

(Use of any data book from the above will be permitted during the examination).

SUBJECT CODE: 5BVCGEC9 SEMINAR & PROJECT

Seminar & Completion of 25% of Project Based on Farm Equipment & Machinery.

Design project / Model / Collaboration with any farm equipment & manufacturing industry / workshop / college / university.

Report writing based on the above work.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBED FOR GENERAL EDUCATION COMPONENT

B.VOC. PART – III (VOCATION)
SEMESTER – VI
SUBJECT CODE: 6BVCGEC1 & 6BVCGEC5 INDUSTRIAL ORGANIZATION & MANAGEMI

I) OWNERSHIP AND ENTERPRENEURSHIP DEVELOPMENT

Individual, Partnership, Joint Stock companies, Co-operative, public sectors and government undertakings, differen compariosn, merits. Project and feasibility reports, licensing, Sclae of Industry – Small, medium and large, registrat other formalities. Excise and relevant taxation. Procurement of power water and other facilties.

II) FINANCE

Sources, raising of finances, Banks, Finanacial Institutions leasing institution, Shares debentures, loans, credits, conv bonds. Cost account and control, Prime cost, elements of cost, break even Chart, budget and budetary control, Profit account, Balance Sheet.

III) SITE SELECTION AND PLANT LAYOUT

Factors affecting selection economic survey of site selection. Functional layout, product layout mixed layout, advan disadvantages.

IV) GENERAL FUNCTIONS IN INDUSTRIES

Procuring or buying, inspections, storing production material handling, packing and formwarding, marketing, super different systems of the above functions. There advantages and disadvantages equipment necessary to carry out the functions.

PRACTICAL – Practical Report should be submitted on above subject

References Books:

i) Financial Management – Dr. Rastogi / Prasanna Chandra, Publications: Tata Mac Grow- Hill, New Delhi
ii) Financial Management Theory and Practice – Prasanna Chandra
iii) Entrepreneurship Development – Dr. K . Natarajan
iii) Entrepreneurship Development – B. Badnai, B. K. Publications
iii) Entrepreneurship Development – Dr. Jayashri Suresh, Margam Publications

SUBJECT CODE: 6BVCGEC2 & 6BVCGEC6 SOFT SKILL DEVELOPMENT- III

Unit - I

Introduction, Corporate Culture: Definition and Meaning, Professionalism at the workplace, Youthfulness and its role in professional growth, Dynamism and its contribution towards success, The concept of being Goal-Oriented, How to be a team player

Unit - II

How to be an effective leader: The role of Emotional Intelligence, Managing your state of mind, Being proactive, Emphatic Listening, Developing a WIN-WIN attitude, Using the right style- Situational leadership, Adaptability to change

Unit-III

The Importance of Employees in an Organisation: The importance of employee evaluation, How to prepare an evaluation, How to motivate employees, Physical health and leisure time

Unit-IV

The management model: Introduction, The CRM Management Model, Introduction and Overview of the Model, The Management Model, Reasons for failure of CRM

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference books:

Effective Human Resourse Training And Development : Dr B Rathan Reddy, Himalaya

Communication Skills : Sanjay Kumar , Datta

SUBJECT CODE: 6BVCFEM4 & 6BVCFEM8 MECHATRONICS ENGINEERING

Course Content Theory:-

Unit No.1 : Introduction to mecahntronic engineering. Measurement systems control systems

Unit No 2 : Actuator Electromechanical actuators, Electrical machines Hydraulic and Pneumatic actuation systems.

Unit No. 3 : Speed Measurements: Various mechanical type tachometers, electrical types' tachometers etc.
Vibration Measurements: Seismic, Strain gauge and piezoelectric accelerometers

Unit No. 4 : Pneumatics, electro pneumatics hydraulic, valves, limit switches DCV, solenoids.

Practicals:-

1. Study of any type Electromechanical Actuator farm mechanization
2. Demonstration piezoelectrial crystal.
3. Study of DC servomotor, stepper motor, relay, solenoid.
4. Metering Seeds mechanisms

References:-

1. Salivahanan. S., N Suresh Kumar and A. Vallavaraj, 2006 Electronic Devices and Circuits. Tata McGraw-Hill Publishing Company Limited, New Delhi.
2. Ernest O. Doebelin, 1990. Measurement System – Application and Design. McGraw-Hill Publishing Company, London.
3. Gupta. B.R., 1999.Electronicsand Instrumentation Second Edition. Wheeler Publishing, New Delhi.
4. Singh.S.K. 2005. Industrial Instrumentation and Control, Second Edition. Tata McGraw-Hill Publishing Company Limited, New Delhi.
5. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technician- State Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyderabad.
6. Measurement System by D.S. Kumar – Dhanpat Rai & Sons, New Delhi.
7. Measurement Systems : - By Ernest O. Doebelins - MC Graw Hill

SUBJECT CODE: 6BVCGEC2 & 6BVCGEC6 SOFT SKILL DEVELOPMENT- III

Unit - I

Introduction, Corporate Culture: Definition and Meaning, Professionalism at the workplace, Youthfulness and its role in professional growth, Dynamism and its contribution towards success, The concept of being Goal-Oriented, How to be a team player

Unit - II

How to be an effective leader: The role of Emotional Intelligence, Managing your state of mind, Being proactive, Emphatic Listening, Developing a WIN-WIN attitude, Using the right style- Situational leadership, Adaptability to change

Unit-III

The importance of Employees in an Organisation: The importance of employee evaluation, How to prepare an evaluation, How to motivate employees, Physical health and leisure time

Unit-IV

The management model: Introduction, The CRM Management Model, Introduction and Overview of the Model, The Management Model, Reasons for failure of CRM

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference books:

Effective Human Resourse Training And Development : Dr B Rathan Reddy, Himalaya

Communication Skills : Sanjay Kumar , Datta

SUBJECT CODE: 6BVCFEM4 & 6BVCFEM8 MECHATRONICS ENGINEERING

Course Content Theory:-

Unit No.1 : Introduction to mecahntronic engineering. Measurement systems control systems

Unit No 2 : Actuator Electromechanical actuators, Electrical machines Hydraulic and Pneumatic actuation systems.

Unit No. 3 : Speed Measurements: Various mechanical type tachometers, electrical types' tachometers etc.
Vibration Measurements: Seismic, Strain gauge and piezoelectric accelerometers

Unit No. 4 : Pneumatics, electro pneumatics hydraulic, valves, limit switches DCV, solenoids.

Practicals:-

1. Study of any type Electromechanical Actuator farm mechanization
2. Demonstration piezoelectrial crystal.
3. Study of DC servomotor, stepper motor, relay, solenoid.
4. Metering Seeds mechanisms

References:-

1. Salivahanan. S., N Suresh Kumar and A. Vallavaraj, 2006 Electronic Devices and Circuits. Tata McGraw-Hill Publishing Company Limited, New Delhi.
2. Ernest O. Doebelin, 1990. Measurement System – Application and Design. McGraw-Hill Publishing Company, London.
3. Gupta. B.R., 1999.Electronicsand Instrumentation Second Edition. Wheeler Publishing, New Delhi.
4. Singh.S.K. 2005. Industrial Instrumentation and Control, Second Edition. Tata McGraw-Hill Publishing Company Limited, New Delhi.
5. FARM EQUIPMENT AND TRACTORS *Sri Shali Habibulla* Department of Rural Engineering Technician- State Institute of Vocational Education Directorate of Intermediate Education Govt. of Andhra Pradesh, Hyderabad.
6. Measurement System by D.S. Kumar – Dhanpat Rai & Sons, New Delhi.
7. Measurement Systems : - By Ernest O. Doebelins - MC Graw Hill

SUBJ CODE: 6BVCFEM4 & 6BVCFEM7 COMPUTER AIDED DESIGN & COMPUTER AIDED MFG.

Course Content Theory:-

Unit No. 1 : Introduction to CAD, 2-D, 3-D, Introduction to Advance CAD systems & software's Scope, ad Disadvantages, Limitations.

Unit No. 2: Methods of projection First angle & third angle, Orthographic & isometric Geometric & solid mo

Unit No. 3 : NC/CNC:- Basic concept. N.C. controls- Point to point, straight-cut and continuous path control control units, closed system, NC machine components, tooling. CNC & DNCs Applications and economics of CNC.

Unit No. 4 : Computer Integrated Manufacturing: Introduction, Integration. Sequence of functions in CIM, el CIM system. CIM wheel, structure of CIM database system. Guidelines for CIM development, b CIM shop floor control and process monitoring.

Automated inspection and testing: Introduction to automated inspection. Advantages over t method. On-line & off-line inspection, CMM construction, types & working.

Practicals:-

1. Study of various types CAD software for designing.
2. Sheet on orthographic projection.
3. Visit to CNC, Manufacturing center & prepare report.
4. Case studies any farm equipment manufacturing company having ERP/CAD /Module.

References:-

1. CAD/CAM Theory and Practice / Ibrahim Zeid / Mc Graw Hill international.
2. Mastering CAD/CAM / Ibrahim Zed / Mc ...
3. CAD/CAM Principles and Applications, Dr.P.N.Rao, Tata Mc Grew Hill
4. Mikell P. Grover and Enory W. Zimmers Jr. "CAD/CAM", Pearson Education, New Delhi. 4.
5. Production System, Automation and CIM; Mikhal Grover; Pearson Publications.
6. CNC Machines; M. Adithan & B.S.Pabla; New Age International

SUBJECT CODE: 6BVCFEM9 PROJECT PHASE-II

Completion of remaining 75% of Project Based on Farm Equipment & Machinery.

Design project / Model / Collaboration with any farm equipment & manufacturing industry / workshop / college u
Report writing based on the above work.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBED FOR VEHICLE TESTING
B.VOC. PART – I (VOCATION)
SEMESTER – I

SUBJECT CODE: 1BVCGEC1& 1BVCGEC6 ENGLISH AND COMMUNICATIONS SKILL-I

Unit 1
Revisiting English Grammar: articles, prepositions, adjectives

Unit 2
Written Communication: letter writing (customer complaints, general complaints, seeking information, placing orders)

Unit 3
Reading Skills: scanning and skimming, reading comprehension, summarizing

Unit 4
Communication Skills: language functions (greeting, taking leave, thanking, apologizing, introducing self)

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:
Bhaskaran & Horsburgh. *Strengthen Your English*. OUP (Unit 1)
Patil, Valke, Thorat & Merchant. *English for Practical Purposes*. Macmillan (Unit 2, 3& 4)
Dwivedi & Kumar. *Macmillan Foundation English*. Macmillan

SUBJECT CODE: 1BVCGEC2 & 1BVCGEC7 APPLIED COMPUTER SKILL-I

Unit I

Word Processing

Introduction, Starting word, Creating document, Structure of Ms-word window and its application, Mouse & keyboard operations, designing a document; formatting-selection, cut, copy, paste, Toolbars, operating on text; Printing, Saving, Opening, Closing of document; creating a template

Unit II :

Tables, borders, textbox operations; Spelling and Grammar check, Mail merge, Envelope and Label, Protection of document, Change the view of document.

Unit III

PowerPoint Presentation-Working with PowerPoint Window, Standard Toolbar, Formatting Toolbar, Drawing Toolbar, Moving the Frame, Inserting Clip Art, Picture, Slide; Text Styling, Send to Back.

Unit IV Entering Data to Graph, Organization Chart, Table, Design Template, Master Slide, Animation Setting, Saving and Presentation, Auto Content Wizard, Package for CD (Pack & Go Feature).

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference Books:
1. Information technology concepts by Dr. Madhulika Jain, Shashank & Satish Jain, [BPB Publication, New Delhi.]
2. Fundamentals of Information Technology By Alexis And Mathews Leon
[Leon Press, Chennai & Vikas Publishing House Pvt Ltd, New Delhi]
3. Computer Fundamentals by P. K. Sinha

SUBJECT CODE: 1BVCVT3 & 1BVCVT8 BASICS OF AUTOMOBILE-1

Course Content Theory:-

Unit -1 **History of Automobile**: -
Indian and worlds leading Automobile Industries, history and development, Introduction to various Indian Vehicle manufacturer.

Unit -2 **Classification of Automobile** Introduction to the various types, Components of automobile vehicle.

Unit-3 **Engine and its components**. Construction and working principle of I.C engine, classification of I.C.engine.

Unit-4 **Construction and working**: Two stroke petrol engine & four stroke petrol/Diesel engine

Practicals:-

1. Two stroke petrol engine & four stroke petrol/Diesel engine
2. Demonstration of various automobile parts used in Two wheeler, Three wheeler, Four wheeler their basic function, construction & location etc.
3. Demonstration of various engine components their function, construction, location, material etc. Sketching of Various engine components.
4. Demonstration on working of two strokes and four stroke engine on cut section Model (petrol & diesel engine also used of)

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.

SUBJECT CODE: 1BVCVT4 & 1BVCVT9 WORKSHOP TECHNOLOGY-1

Course Content Theory:-

Unit -1 **Workshop Basics**
Introduction of work shop, work shop ethics, discipline, safety precaution, elementary first aid, works lay out, 5's' techniques.

Unit -2 **Workshop Tools** Introduction and use of various tools and equipment used in work shop.
General tools : - Hammer, Chisels, Hacksaw frame, Screw driver, Punches, Pliers, Files, Spanner, Allen key
Special tools: - Taps Dies, Reamers, and Scrapper etc.

Unit-3 **Measuring tools:** - Inside caliper, outside caliper, Vernier caliper (Inside/Outside), Microm Inside/Outside), Height gauge, Try square, Feeler gauge.
Marking Tools: - Surface plate, Angle plate, Scribing block, Height gauge, Dial indicator, 'V' Block et

Unit-4 **Automobile Tools** Introduction and use of various Automobile tools equipments: - Chain Pulley block Mechanical & Hydraulic Jack & axle stands , Piston ring **compressor**, Piston ring expander, Stud extractor, Valve spring lifter, Tap extractor, Pullers, Grip pliers, Filter wrench, Torque wrench, Grow

PracticalS:-

1. Introduction to the work shop , types of work done in work shop , job opportunity (Organization chart duties and responsibility)
2. Practice on health & safety - importance of safety precaution, Shoes, Dressing, safety symbol, and safe equipments. Practice on how to use first aid & fire extinguishers.
3. Practice on 5.s technique
4. Demonstration on how to use various tools used in work shop, their free hand sketching. General tools – Measuring tools, marking tools, Special tools.
5. Demonstration on how to use various tools used in work shop, their free hand sketching. Measuring tools, marking tools.
6. Demonstration on how to use various Tools and equipments used in two wheeler garage , Tools and equipments used in four wheeler garage
7. Practice on checking the battery for charging, connecting the battery for charging
8. Demonstration on painting equipments, coating and polishing.

References:-

1) Workshop technology –Vol-1 S.K Hajra Choudary ,- A.K Hajra Choudary , Nirjhar Roy -Media Promoters & publication pvt Ltd
2) Workshop technology –Vol-2 S.K Hajra Choudary ,- A.K Hajra Choudary , Nirjhar Roy -Media Promoters & publication pvt Ltd
3) Workshop technology –Vol-1 B.S Raghuwanshi Dhanpatrai Publication
4) Workshop technology –Vol -2 B.S Raghuwanshi , Dhanpatrai Publication
5) Workshop technology -1 S R. Raghuwanshi,V.B kulkarni, V.NDas Pute,H.S Pawar, S.S patil –Director of Vocational & training Mumbai.

SUBJECT CODE : 1BVCVT5 & 1BVCVT10 BASIC OF VEHICLE TESTING-1

Course Content Theory:-

Unit 1: testing of different components of vehicle: clutch, gear box, propeller shaft, differential, axels, wheels.

Unit 2: Testing of vehicle systems: Test procedure of brake system, suspension system, steering system.

Unit. 3 : Differentiate between various tests done on various vehicles.

Unit. 4 : Electrical test: Test procedure of various electrical systems like lighting, horn, Indicator, electric accessories, and advance electronic components.

Practicals:-

1. Demonstration on different testing of vehicle components.
2. Demonstration on different testing methods of vehicle systems (brake, suspension, steering.)
3. Prepare chart showing difference of test between various vehicle Industrial/ Vehicle show room visit for different test.
4. Demonstration on Test procedure of various electrical systems like lighting, horn, indicator, electric accessories, advance electronic components.

References:-

1. Automotive Mechanics-William Crouse – Donald L. Anglin – McGraw Hill Education Pt. Ltd. New Delhi.
2. Automotive Mechanics – S. Srinivasan - McGraw Hill Education Pt. Ltd. New Delhi.
3. Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
4. Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
5. Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
6. Automotive Electrical Equipment – P.L. Kohli - Tata McGraw Hill Tenth edition.
7. Automotive Mechanics – S.Shrinivasan - Tata McGraw Hill Second edition.
8. Automobile Engineering – R.B. Gupta – Satyaprakashan.
9. Automobile Engineering Volume 1 – K.M. Gupta – Umesh Publication.
10. Automobile Engineering Volume 2 – K.M. Gupta – Umesh Publication.

SUBJECT CODE: 1BVCVT11 FIELD WORK/INDUSTRIAL VISIT

Visit to any vehicle equipment & manufacturing industry / workshop / college / university / technical expo / international & national exhibitions.
Report writing based on the above work.
Assessment done on the basis of via-voc and report by the teaching faculty.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBED FOR VEHICLE TESTING

B.VOC. PART – I (VOCATION)

SEMESTER – II

SUBJECT CODE: 2BVCGEC1 & 1BVCGEC6 ENGLISH AND COMMUNICATIONS SKILL-II

Unit 1

Revisiting English Grammar: modal auxiliaries, adverbs and adverbial phrases

Unit 2

Written Communication: job applications, resumes, responding to advertisements

Unit 3

Reading Skills: Note making, distinguishing facts from beliefs, opinions

Unit 4

Communication Skills: language functions (asking for information, requesting , agreeing and disagreeing, complimenting and responding to compliments)

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:

1. Bhaskaran & Horsburgh. *Strengthen Your English*. OUP (Unit 1)
2. Patil, Valke, Thorat & Merchant. *English for Practical Purposes*. Macmillan (Unit 2, 3 & 4)
3. Dwivedi & Kumar. *Macmillan Foundation English*. Macmillan

SUBJECT CODE: 2BVCGEC2 & 1BVCGEC7 APPLIED COMPUTER SKILLS - II

Spreadsheet Package

Unit I:
Introduction To Ms-Excel, Navigating, Excel Toolbars and Operations, Formatting Features-Copying Data Between Worksheets; Entering and Editing Cell Entries, Creation of Charts, Editing and Formatting Charts

Unit II:
Goal Seek, Auditing, Linking, Workbook, Database in Excel (Auto Filter, Advanced Filter, Sort, Form). Mathematical, Statistical and Financial Functions in Ms-Excel.

Unit III:
MS-Access- Introduction to database management system, DBMS vs RDBMS

Unit IV:
Database Administrator (DBA) and its role.

RACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference Book:

1. Data Base System Concepts By A SilbersChatz By Henry Korth And S.Sudarshan [Mcgraw-Hill ltd. New Delhi] 3rd Edition.
2. Introduction to Data Base Management by NAVEEN PRAKASH [Tata McGrawHill ltd.]
3. Bipin C. Desai, An Introduction to Database Systems, Galgotia Publications.
4. Raghu Ramakrishnan & Johannes Gerhrke, "Data Base Management Systems", Mc Graw Hill International Edition, 2000

SUBJECT CODE: 2BVCVT3 & 2BVCVT8 BASICS OF AUTOMOBILE-II

Course Content Theory:-

Unit -1: Vehicle Automobile Specification
Technical Specification Details Vehicle specification, engine specification Technical details included in owners and service manual. Work, power, energy, efficiency, bore, stroke, displacement, compression ratio, IHP, BHP.

Unit -2: Automobile Electrical System: Basic concept of electricity. Current, Ampere, Volt,Resistance, Ohm law, potential difference, parallel circuit, series circuits, Wiring in farm automobile

Unit-3 : Automobile Cooling, Lubrications fuel & specifications Classification, properties & Uses of coolants, viscosity, material properties

Unit-4 : Classification of automobiles: Two & Four stroke engines, Diesel & petrol engine, maintenance, Engine parts & its study

Practicals:-

1. Collection of vehicle information broacher from authorized dealer and prepare chart on technical details.
2. Prepare chart of various two and four wheeler dealers available in city-Dealer name, address, contact number, manufacturer details and their various Models.
3. Study on service manual on any one automobile vehicle model.
4. Study of electrical circuit - parallel and series.
5. Practice on using various electrical measuring equipment.
6. Visit to automobile garages/ automobile industries.
7. Study of various four stoke engine.

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.
6) Automotive Electrical Equipment – P.L. Kohli - Tata McGraw Hill Tenth edition.
7) Automotive Mechanics – S.Shrinivasan - Tata McGraw Hill Second edition.
8) Automobile Engineering – R.B. Gupta – Satyaprakashan.
9) Automobile Engineering Volume 1 – K.M. Gupta – Umesh Publication.
10) Automobile Engineering Volume 2 – K.M. Gupta – Umesh Publication.

SUBJECT CODE: 2BVCVT4 & 2BVCVT9 WORKSHOP TECHNOLOGY-2

Course Content Theory:-

Unit : 1 Introduction of General machineries: Introduction, working, Construction and use of machines: - Milling, Shaper, Drill, Grinding.

Unit.2: Air Compressor, Fly press, Pipe bending M/c, Wheel aliment M/c, Wheel balancer M/c, Fuel Injection pump testing bench, Tyre changer M/c, Tyre inflection M/c, Decarburizing M/c etc.

Unit. 3: Introduction to Welding Welding M/c (Arc/Gas), Soldering and Brazing, Thermit welding TIG MIG & its applications

Unit 4 : Hydraulic press, tyre remover, wheel balancing machines, high pressure washing Machine, spark plug testing & cleaning machine

Practicals:-

1. machine used in Demonstration on various automobile industries - Compressor, Drilling, Grinding, Welding (Arc & Gas), Hand Operated & Hydraulic Operated Press, lathe, milling, shaper machine, crank shaft grinding, cylinder boring, cylinder head refacing, honing, Wheel Alignment, Tyre changer, Wheel balancing M/c.
2. Demonstration of Decarburizing Process, smoke tester, FI pump testing, car washing, hydraulic hoist, air compressor etc.
3. Study of Wheel alignment by visiting Wheel balancing center
4. Preparation of any job on welding process using any type of welding
5. Demonstration on various heat treatment Process on Automobile parts.
6. Study of casting & forging products.
7. Visit to Garage for usage of Tools & Equipments Used in two, three and four wheeler garage. Various automobile dealers/ authorized work shop. Automobile Industry/ Automobile components manufacturing industries.

References:-

1) Workshop technology –Vol-1 S.K Hajra Choudary ,- A.K Hajra Choudary , Nirjhar Roy -Media Promoters & publication pvt Ltd
2) Workshop technology –Vol-2 S.K Hajra Choudary ,- A.K Hajra Choudary , Nirjhar Roy -Media Promoters & publication pvt Ltd
3) Workshop technology –Vol-1 B.S Raghuwanshi Dhanpatrai Publication
4) Workshop technology –Vol -2 B.S Raghuwanshi , Dhanpatrai Publication
5) Workshop technology -1 S R. Raghuwanshi,V.B kulkarni, V.NDas Pute,H.S Pawar, S.S patil – Director of Vocational & training Mumbai.

SUBJECT CODE: 2BVCVT5 & 2BVCVT10 BASIC OF VEHICLE TESTING-2

Course Content Theory:-

Unit No. 1 : Testing of Automobile Engine
Classification of test, Fault finding test, vacuum test, Cylinder compression test.

Unit No. 2 : Routine tests 1
Measurement of indicated power. Mechanical indicators, optical indicators, cathode ray indicators.

Unit No. 3 : Routine tests 2
Measurement of Brake power. Air dynamometers, hydraulic dynamometers, Electrical dynamometers.

Unit No. 4 : Measurement of Fuel Consumption
Thermal efficiency, Relative Efficiency, Air consumption measurements.

Practicals:-

1. Testing of Automobile Engine
2. Routine tests 1 Measurement of frictional power.
3. Routine tests 2 Measurement of Brake power.
4. Measurement of Fuel Consumption
5. Calculation of Heat Balance Sheet.

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.
6) Automotive Electrical Equipment – P.L. Kohli - Tata McGraw Hill Tenth edition.
7) Automotive Mechanics – S.Shrinivasan - Tata McGraw Hill Second edition.
8) Automobile Engineering – R.B. Gupta – Satyaprakashan.
9) Automobile Engineering Volume 1 – K.M. Gupta – Umesh Publication.
10) Automobile Engineering Volume 2 – K.M. Gupta – Umesh Publication.

SUBJECT CODE: 2BVCVT11 FIELD WORK/INDUSTRIAL VISIT

Visit to any vehicle equipment & manufacturing industry / workshop / college / university / technical expo international & national exhibitions.
Report writing based on the above work.
Assessment done on the basis of via-voc and report by the teaching faculty.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

SYLLABUS PRESCRIBED FOR VEHICLE TESTING

B.VOC. PART – II (VOCATION)

SEMESTER – III

SUBJECT CODE: 3BVCGEC1 & 3BVCGEC6 ENGLISH AND COMMUNICATIONS SKILL-III

Unit 1

Revisiting English Grammar: Forming questions, using conditionals, question tags

Unit 2

Writing Skills: Paragraph writing, writing newspaper reports

Unit 3

Comprehension Skills: converting verbal information into non-verbal and vice-versa, interpreting graphs, charts and diagrams

Unit 4

Communication Skills: short situational conversations, self-introduction, short talks

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:

1. Bhaskaran & Horsburgh. *Strengthen Your English*. OUP (Unit 1)
2. Patil, Valke, Thorat & Merchant. *English for Practical Purposes*. Macmillan (Unit 2& 3)
3. Dwivedi & Kumar. *Macmillan Foundation English*. Macmillan

Taylor, Grant. *English Conversational Practice*. Tata McGraw-Hill

SUBJECT CODE: 3BVCGEC2 & 3BVCGEC7 APPLIED COMPUTER SKILL-III

Unit-I:

MIS- Systems Concepts - Systems approach, characteristics, Types of Systems; Elements – input, Output, environment, Boundary Interface, Feedback & Control

Unit II:

Systems Life Cycle; MIS, TPS, OAS,DSS,KWS, Value of information, information life cycle, data Vs information, Components of MIS, characteristics of MIS.

Unit III:

System Analysis & Design: System development life cycle. Modeling the required system,

Unit IV:

E-R diagrams, ELHs, ECDs, user view of processing, modeling input output data.

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Recommended books:

- ✓ Microsoft Office – 2008 – Gini Courter , Annette Marquis BPB
- ✓ It Today (Encyclopedia) – S. Jaiswal
- ✓ A First Course In Computers - Sanjay Saxena
- ✓ First Text Book On Information Technology – Srikant Patnaik
- ✓ Guide To Microsoft Access – Carl Townsand
- ✓ An Introduction To Database Management System – Bipin C. Desai (Galgotia Pub.)
- ✓ Database Management Design – CSV Murthy (Himalaya)
- ✓ Management Information System - Goyal

Management Information System : Jawadekar (TMH)

SUBJECT CODE: 3BVCVT3 & 3BVCVT8 ENGINE SYSTEM-1

Course Content Theory:-

Unit. 1 : Study of Ignition System: Function and use of components, Circuits, Types of ignition system.

Unit. 2 : Study of Cooling System: Function and use of components, Layout, Types of cooling system.

Unit. 3 : Study of Fuel Supply System for Petrol Engine: Function and use of components, Layout, Types of Fuel supply system.

Unit. 4 : Study of Fuel Supply System for Diesel Engine: Function and use of components, Layout, Types of Fuel supply system.

Practicals:-

1. Demonstration on different types of ignition system in two wheeler & four wheeler.
2. Demonstration on different types of cooling system in two wheeler & four wheeler.
3. Demonstration on different types of Fuel supply system in two wheeler & four wheeler Petrol vehicle.
4. Demonstration on different types of Fuel supply system in two wheeler & four wheeler Diesel vehicle.

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.

SUBJECT CODE: 3BVCVT4 & 3BVCVT9 TESTING OF ENGINE SYSTEM-1

Course Content Theory:-

Unit. 1 : Trouble Shootings of Ignition System: Engine does not start, Engine miss fire, engine over heat, Engine does not pick up speed etc.

Unit 2 : Trouble Shootings of Cooling System: Engine miss fire, engine over heat, Engine does not pick up speed, Engine seize etc.

Unit. 3 : Trouble Shootings of Petrol fuel supply System: Engine does not start, Engine miss fire, Engine does not pick up speed, Engine start but stop immediately, Low fuel economy etc.

Unit 4 : Trouble Shootings of Diesel fuel supply System: Engine does not start, Engine miss fire, Engine does not pick up speed, Engine start but stop immediately, Low fuel economy etc

Practicals:-

1. Conduct the practical's on Trouble Shootings of Ignition System: Engine does not start, Engine miss fire, engine over heat, Engine does not pick up speed etc.
2. Conduct the practical's on Trouble Shootings of Cooling System: Engine miss fire, engine over heat, Engine does not pick up speed, Engine seize etc.
3. Conduct the practical's on Trouble Shootings of Petrol fuel supply System: Engine does not start, Engine miss fire, Engine does not pick up speed, Engine start but stop immediately, Low fuel economy etc.
4. Conduct the practical's on Trouble Shootings of Diesel fuel supply System: Engine does not start, Engine miss fire, Engine does not pick up speed, Engine start but stop immediately, Low fuel economy etc.

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.
6) Automotive Electrical Equipment – P.L. Kohli - Tata McGraw Hill Tenth edition.
7) Automotive Mechanics – S.Shrinivasan - Tata McGraw Hill Second edition.
8) Automobile Engineering – R.B. Gupta – Satyaprakashan.
9) Automobile Engineering Volume 1 – K.M. Gupta – Umesh Publication.
10) Automobile Engineering Volume 2 – K.M. Gupta – Umesh Publication.

SUBJECT CODE: 3BVCVT5 & 3BVCVT10 MECHATRONICS ENGINEERING – I

Course Content Theory:-

Unit 1 Introduction to mecahntronic engineering. Measurement systems control systems.

Unit. 2 Sensors & transducers Types of sensors, transducers like strain gauge, Semiconductor, Diodes, Transistor, Pulse generator.

Unit. 3 Pneumatics, electro pneumatics hydraulic actuators, valves, limit switches DCV, solenoids.

Unit. 4 Optical Switch, Ignition Advance, Coil on plug [COP], Capacitor discharge system

Practicals:-

1. Study of various control systems.
2. Study of various sensors Experimental on load cell.
3. Measurement of load using dynamometers on tractor s & farm equipments.
4. Study of various actuators.
5. Study of solid state devices.

References:-

1. Salivahanan. S., N Suresh Kumar and A. Vallavaraj, 2006 Electronic Devices and Circuits. Tata McGraw-Hill Publishing Company Limited, New Delhi.
2. Ernest O. Doebelin, 1990. Measurement System – Application and Design. McGraw-Hill Publishing Company, London.
3. Gupta. B.R., 1999.Electronicsand Instrumentation Second Edition. Wheeler Publishing, New Delhi.
4. Singh.S.K. 2005. Industrial Instrumentation and Control, Second Edition. Tata McGraw-Hill Publishing Company Limited, New Delhi.
5. Measurement System by D.S. Kumar – Dhanpat Rai & Sons, New Delhi.

SUBJECT CODE: 3BVCVT11 FIELD WORK/INDUSTRIAL VISIT

Visit to any vehicle equipment & manufacturing industry / workshop / college / university / technical expo / international & national exhibitions.

Report writing based on the above work.

Assessment done on the basis of via-voc and report by the teaching faculty.

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
SYLLABUS PRESCRIBED FOR VEHICLE TESTING
B.VOC. PART – II (VOCATION)
SEMESTER – IV

SUBJECT CODE: 4BVCGEC1 & 4BVCGEC6 ENGLISH AND COMMUNICATIONS

Unit 1

Grammar: Use of modal auxiliaries, use of passive voice

Unit 2

Writing: summarizing articles and passages, writing short reviews

Unit 3

Vocabulary: synonyms, antonyms, idioms and phrases, converting idiomatic into plain English and vice versa

Unit 4

Communication Skills: group discussion, short presentations

Recommended books:

1. Narayanswamy, K. R. *Success with Grammar and Composition.* Orient Longman (Unit 1 & 2)
2. Dwivedi & Kumar. *Macmillan Foundation English.* Macmillan (Unit 3)
3. Bhaskaran & Horsburgh. *Strengthen Your English.* OUP (Unit 2)
4. Patil, Valke, Thorat& Merchant: *English for Practical Purposes.* Macmillan (Unit 2)
5. Taylor, Grant. *English Conversational Practice.* Tata McGraw-Hill.

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

SUBJECT CODE: 4BVCGEC2 & 4BVCGEC7 SOFT SKILL DEVELOPMENT-I

Unit I:

Introduction to business communication, Introduction to sound system of English, Introduction to effective writing, non verbal communication.

Unit II:

The self concept, Self management techniques. Self image and self esteem, Building self confidence, Personal planning and success attitude, creating the master plan, active positive visualization and positive attitude, Spot analysis.

Unit III:

Self motivation & communication:

Levels of motivation, power of irresistible enthusiasm, etiquettes and manners in a group, public speaking, oral and written communication, Body language, Importance of listening and responding, Tips for technical writing.

Unit IV

Etiquettes: office etiquettes, email etiquettes, telephone etiquettes, goal setting and time managements.
Team dynamics: Introduction to team work, working in teams, personal attitude, conflicts and its resolutions assertiveness, diversity, Role of career planning in personality development, How to face personal interviews and group discussions.

Note:
Self paced learning
Industry Awareness
Assignments and Discussions

PRACTICAL – PRACTICAL BASED ON ABOVE CHAPTER

Reference Book:

Personality Development by Rajiv K. Mishra, Rupa & Co.

SUBJECT CODE: 4BVCVT3 & 4BVCVT8 ENGINE SYSTEM - 2

Course Content Theory:-

Unit No. 1 : Study of Electrical System for Diesel and Petrol Vehicle: Function and use of components, Layout, Types of Electrical system.

Unit No. 2 : Study of Automobile Battery: Function, construction, Types, Charging etc.

Unit No. 3 : Study of Electrical Charging System for Diesel and Petrol Vehicle: Function and use of components, Layout, Types of Charging system, Dynamo, Alternator.

Unit No. 4 : Study of Electrical Starting System for Diesel and Petrol Vehicle: Function and use of components, Layout, Types of starting system, Starter Motor.

Practicals:-

1. Demonstration on different types of Electrical system in two wheeler & four wheeler vehicle.
2. Demonstration of Automobile Battery: Function, construction, Types, Charging etc.
3. Demonstration of Electrical Charging System for Diesel and Petrol Vehicle: Layout of Charging system, Assembly and Disassembly of Dynamo, Alternator.
4. Study of Electrical Starting System for Diesel and Petrol Vehicle: Function and use of components, Layout, Types of starting system, Starter Motor Visit to vehicle garage show rooms for studding of different system used on Engine

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.
6) Automotive Electrical Equipment – P.L. Kohli - Tata McGraw Hill Tenth edition.
7) Automotive Mechanics – S.Shrinivasan - Tata McGraw Hill Second edition.
8) Automobile Engineering – R.B. Gupta – Satyaprakashan.
9) Automobile Engineering Volume 1 – K.M. Gupta – Umesh Publication.
10) Automobile Engineering Volume 2 – K.M. Gupta – Umesh Publication.

SUBJECT CODE: 4BVCVT4 & 4BVCVT9 TESTING OF ENGINE SYSTEM- 2

Course Content Theory:-

Unit No. 1 : Trouble Shootings of Electrical System: Engine does not start, Engine miss fire, No Light, No Horn, No Indicator etc.

Unit No. 2 : Trouble Shootings of Battery System: Engine does not start, Engine miss fire, No Light, No Indicator in Dash Board etc.

Unit No. 3 : Trouble Shootings of Charging System: Engine does not Charge Engine, Noise in Charging system Low current ratting etc.

Unit No. 4 : Trouble Shootings of Starting System: Engine does not Crank Engine, Noise in Starting system High current Consumption etc.

Practicals :-

1. Conduct the practical's on Trouble Shootings of Electrical System: Engine does not start, Engine miss fire, No Light, No Horn, No Indicator etc.
2. Conduct the practical's on Trouble Shootings of Battery System: Engine does not start, Engine miss fire, No Light, No Indicator in Dash Board etc.
3. Conduct the practical's on Trouble Shootings of Charging System: Engine does not Charge Engine, Noise in Charging system Low current ratting etc.
4. Conduct the practical's on Trouble Shootings of Starting System: Engine does not Crank Engine, Noise in Starting system High current Consumption etc.
5. Visit to local garage to study the various troubles shooting on the entire above syllabus.

References:-

1) Basic of Automobile Engineering -C.P. Nakara-Dhanpatrai Publication
2) Automobile Engineering Volume 1-Dr. Kripal Singh-Standard Publisher Distributor
3) Automobile Engineering Volume 2-Dr. Kripal Singh-Standard Publisher Distributor
4) Automotive Mechanics – William H. Crouse – Tata McGraw Hill Tenth edition.
5) Automotive Mechanics – Donald L. Anglin – Tata McGraw Hill Tenth edition.
6) Automotive Electrical Equipment – P.L. Kohli - Tata McGraw Hill Tenth edition.
7) Automotive Mechanics – S.Shrinivasan - Tata McGraw Hill Second edition.
8) Automobile Engineering – R.B. Gupta – Satyaprakashan.
9) Automobile Engineering Volume 1 – K.M. Gupta – Umesh Publication.
10) Automobile Engineering Volume 2 – K.M. Gupta – Umesh Publication.

SUBJECT CODE: 4BVCVT5 & 4BVCVT10 MECHATRONICS ENGINEERING – 2

Course Content Theory:-

Unit. 1: **Basic of Electrical System**

Introduction, Study of electrical, basics of systems & principles. Ampere meter, hour gauge.

Unit. 2 : **Automotive Air conditioning:** Introduction, Ventilation, heating system, PrincipleOf A/C, Working, compressors, safety devices, safety precautions

Unit. 3 : **Light & auxiliary Equipments,** lighting Circuit, Fuses, cable size, colors, wind Screen Wipers, flasher circuit

Unit 4 : **Dynamo & Alternator:** introduction, principle, Current & voltage regulator, purpose & principle of alternator

List of Practicals:

1. Study of Ampere meter.
2. Study of various lights available for automobiles [Market survey]
3. Speed measurement by magnetic pick up tachometer.
4. Study of Dynamo & Alternator
5. Study of different Automotive Air conditioning

Reference:-

1. Measurement Systems: - By Ernest O. Doebelins - MC Graw Hill.
2. Mechanical Measurement & Control: By D. S. Kumar.
3. Mechanical Measurements: - By T. G. Beck with & N. L. Bulk - Addison Werllv.
4. Instrumental Measurement & Analysis: By Nakra Choudhari Tata Mc Graw Hill.
5. Mechanical Measurement & Instrumentation: By R. K. Raj put, Katsons Books Publications.

SUBJECT CODE: 4BVCVT11 FIELD WORK/INDUSTRIAL VISIT

Visit to any vehicle equipment & manufacturing industry / workshop / college / university / technical expo international & national exhibitions.

Report writing based on the above work.

Assessment done on the basis of via-voc and report by the teaching faculty.