

# **SHIVAJI UNIVERSITY, KOLHAPUR**



NAAC accredited "B" (C.G.P.A. 2.48)

3rd Cycle UGC Recognized

**Faculty of Interdisciplinary Studies  
Structure, Scheme and Syllabus for  
Bachelor of Vocation (B. Voc.)  
Diploma Course**

**Nutrition and Dietetics**

**Part I- Sem. I & II**

(Subject to the modifications that will be made from time to time)

Syllabus to be implemented from 2020-2021 onwards.

**SHIVAJI UNIVERSITY, KOLHAPUR**  
**STRUCTURE AND SYLLABUS OF B.VOC.**

**Bachelor of Vocation (B.Voc.) – Diploma Course: Nutrition and Dietetics.**

- TITLE** : B.Voc. (Nutrition and Dietetics)  
Syllabus ( Semester Pattern)  
Under Faculty of Interdisciplinary Studies
- YEAR OF IMPLEMENTATION:** Syllabus will be implemented from June, 2020
- DURATION** : B. Voc. Part I, II and III ( Three Years)  
B. Voc. Part I - Diploma ( One Year )  
B. Voc. Part II - Advanced Diploma ( Second Year)  
B. Voc. Part III – Degree ( Third Year)
- PATTERN OF EXAMINATION :** Semester Pattern
- **Theory Examination** - At the end of semester as per Shivaji University Rules
  - **Practical Examination** -
    - i) In the 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> semester of B.Voc. there will be internal assessment of practical record, related report submission and project reports at the end of semester
    - ii) In the second semester of B. Voc. I, there will be internal practical examination at the end of semester
    - iii) In the 4<sup>th</sup> and 6<sup>th</sup> semester of B. Voc. there will be external practical examination at the end of semester
- MEDIUM OF INSTRUCTION** : English.
- STRUCTURE OF COURSE** : B. Voc. Part – I, II and III.  
Two Semester Per Year, Two General Papers per year / semester Three Vocational Papers per Year / Semester Three Practical papers per Year / Semester.
- SCHEME OF EXAMINATION :**
- A) THEORY-**
- The theory examination shall be at the end of the each semester.

- All the general theory papers shall carry 40marks and all vocational theory papers shall carry 50marks.
- Evaluation of the performance of the students in theory shall be on the basis of semester examination as mentioned above.
- Question paper will be set in the view of entire syllabus preferably covering each unit of the syllabus.
- **Nature of question paper for Theory examination** (Excluding Business Communication Paper)
  - i) There will be seven questions carrying equal marks.
  - ii) Students will have to solve any five questions

Que. No. 1 : Short answer type question with internal choice (Two out of Three)

Que. No. 2 to Que. No. 6: Long answer type questions.

Que. No. 7 : Short Notes with internal choice (Two out of Three)

**B) PRACTICALS:**

Evaluation of the performance of the students in practical shall be on the basis of semester examination ( Internal assessment at the end of Semester I, II and III and V and external examination at the end of Semester IV and VI as mentioned separately in each paper

**Standard of Passing:**

As per the guidelines and rules for B. Voc. (Attached Separately – Annexure I)

**Eligibility Criteria:**

1. The Eligibility for admission is 10+2 or equivalent, in any stream (Arts/Commerce/Science) from any recognized board or University.
2. The candidates after with 10+2 year ITI course in any branch/trade also eligible for course.
3. The candidates graduate from any faculty or engineering degree/diploma holders are also eligible.

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**Structure of the Course:**  
**B. Voc. –I (Diploma Course) Semester -I**

Sr. No	Paper No.	Title	Theory/ Practical /Project	Marks (Total)	Distribution of Marks		Credits	
					Theory	Practical	Theory	Practical
1	101	Business Communication- I	Theory/ Practical	50	40	10	4	2
2	102	Fundamental of food science - I	Theory/ Practical	50	40	10	4	2
3	103	Human anatomy/ physiology - I	Theory	50	50	-	4	
4	104	Basic nutrition - I	Theory	50	50	-	4	-
5	105	Clinical nutrition/Diet therapy- I	Theory	50	50	-	4	-
6	106	Lab work – Human anatomy- I	Practical	50	-	50	-	4
7	107	Lab work – basic nutrition - I	Practical	50	-	50	-	4
8	108	Lab work – Clinical nutrition/Diet therapy- I	Practical	50	-	50	-	4
9	109	Project		50	-	50	-	-

**Structure of the Course:**  
**B. Voc. –I (Diploma Course) Semester -II**

Sr. No	Paper No.	Title	Theory/ Practical /Project	Marks (Total)	Distribution of Marks		Credits	
					Theory	Practical	Theory	Practical
1	201	Business Communication- II	Theory/ Practical	50	40	10	4	2
2	202	Fundamental of food science - II	Theory/ Practical	50	40	10	4	2
3	203	Human anatomy/ physiology - II	Theory	50	50	-	4	
4	204	Basic nutrition - II	Theory	50	50	-	4	-
5	205	Clinical nutrition/Diet therapy- II	Theory	50	50	-	4	-
6	206	Lab work – Human anatomy- II	Practical	50	-	50	-	4
7	207	Lab work – basic nutrition - II	Practical	50	-	50	-	4
8	208	Lab work – Clinical nutrition/Diet therapy- II	Practical	50	-	50	-	4
9	209	Project		50	-	50	-	-

**Scheme of Teaching: B. Voc. (Diploma Course) – Part I - Semester – I**

Sr. No.	Paper No.	Title	Distribution of workload (Per Week)		
			Theory	Practical	Total
1	101	Business Communication- I	4	2	6
2	102	Fundamental of food science- I	4	2	6
3	103	Human anatomy/physiology- I	4	-	4
4	104	Basic nutrition- I	4	-	4
5	105	Clinical nutrition/Diet therapy - I	4	-	4
6	106	Lab work – Human anatomy- I	-	4	4
7	107	Lab work – basic nutrition - I	-	4	4
8	108	Lab work – Clinical nutrition/ Diet therapy - I	-	4	4
9	109	Project	-	-	-
			20	16	36

**B. Voc. - Part-I - Semester – II**

Sr. No.	Paper No.	Title	Distribution of workload (Per Week)		
			Theory	Practical	Total
1	201	Business Communication- II	4	2	6
2	202	Fundamental of food science-II	4	2	6
3	203	Human anatomy /physiology-II	4	-	4
4	204	Basic nutrition-II	4	-	4
5	205	Clinical nutrition/Diet therapy - II	4	-	4
6	206	Lab work – Human anatomy - II	-	4	4
7	207	Lab work – basic nutrition II	-	4	4
8	208	Lab work – Clinical nutrition/ Diet therapy - II	-	4	4
9	209	Project	-	-	-
			20	16	36

### Structure of Course

#### B.Voc. - II (Advanced Diploma) Sem. III

Sr. no	Paper no.	Title	Theory/practical/project	Marks	Distribution of Marks		Distribution of Workload (per Week)		
					Theory	practical	Theory	Practical	Total
<b>General Education Component</b>									
1.	301	Computer Fundamentals	Theory/practical	50	40	10	4	2	6
2.	302	Soft Skills & Personality Development	Theory/practical	50	40	10	4	2	6
<b>Skill Component</b>									
3.	303	Nutritional Biochemistry-III	Theory	50	50	-	4	-	4
4.	304	Medical Nutrition Therapy-III	Theory	50	50	-	4	-	4
5.	305	Human devolvement/ Public health nutrition-III	Theory	50	50	-	4	-	4
6.	306	Lab work- Nutritional Biochemistry-III	practical	50	-	50	-	4	4
7.	307	Lab work - Medical Nutrition Therapy-III	practical	50	-	50	-	4	4
8.	308	Lab work - Human devolvement/ Public health nutrition-III	practical	50	-	50	-	4	4
9.	309	Health Survey		50	-	50	-	-	-

### Structure of Course

#### B.Voc. - II (Advanced Diploma) Sem. IV

Sr. no	Paper no.	Title	Theory/practical/project	Marks	Distribution of Marks		Distribution of Workload (per Week)		
					Theory	practical	Theory	Practical	Total
<b>General Education Component</b>									
1.	401	Customer Relationship Management	Theory/practical	50	40	10	4	2	6
2.	402	Environmental Studies	Theory/practical	50	40	10	4	2	6
<b>Skill Component</b>									
3.	403	Nutritional Biochemistry-IV	Theory	50	50	-	4	-	4
4.	404	Medical Nutrition Therapy-IV	Theory	50	50	-	4	-	4
5.	405	Human devolvement/ Public health nutrition-IV	Theory	50	50	-	4	-	4
6.	406	Lab work- Nutritional Biochemistry-IV	practical	50	-	50	-	4	4
7.	407	Lab work - Medical Nutrition Therapy-IV	practical	50	-	50	-	4	4
8.	408	Lab work - Human devolvement/ Public health nutrition-IV	practical	50	-	50	-	4	4
9.	409	Health Survey		50	-	50	-	-	-

**Scheme of Teaching : Advanced Diploma Part II (Advanced Diploma) Semester - III**

Sr. no	Paper no.	Title	Distribution of Workload (per Week)		
			Theory	Practical	Total
1.	301	Computer Fundamentals	4	2	6
2.	302	Soft Skills & Personality Development	4	2	6
3.	303	Nutritional Biochemistry-III	4	-	4
4.	304	Medical Nutrition Therapy-III	4	-	4
5.	305	Human devolvement/ Public health nutrition-III	4	-	4
6.	306	Lab work- Nutritional Biochemistry-III	-	4	4
7.	307	Lab work - Medical Nutrition Therapy-III	-	4	4
8.	308	Lab work - Human devolvement/ Public health nutrition-III	-	4	4
9.	309	Health Survey	-	-	-
		<b>Total</b>	<b>20</b>	<b>16</b>	<b>36</b>

**Scheme of Teaching : Advanced Diploma Part II (Advanced Diploma) Semester - IV**

Sr. no	Paper no.	Title	Distribution of Workload (per Week)		
			Theory	Practical	Total
1.	401	Customer Relationship Management	4	2	6
2.	402	Environmental Studies	4	2	6
3.	403	Nutritional Biochemistry-IV	4	-	4
4.	404	Medical Nutrition Therapy-IV	4	-	4
5.	405	Human devolvement/ Public health nutrition-IV	4	-	4
6.	406	Lab work- Nutritional Biochemistry-IV	-	4	4
7.	407	Lab work - Medical Nutrition Therapy-IV	-	4	4
8.	408	Lab work - Human devolvement/ Public health nutrition-IV	-	4	4
9.	409	Health Survey	-	-	-
		<b>Total</b>	<b>20</b>	<b>16</b>	<b>36</b>



**Structure of Course**  
**B.Voc. - III (Degree) Sem. V**

Sr. no	Paper no.	Title	Theory/practical/project	Marks	Distribution of Marks		Distribution of Workload (per Week)		
					Theory	practical	Theory	Practical	Total
1.	501	Nutritional Epidemiology	Theory/practical	50	40	10	4	2	6
2.	502	Research Methodology	Theory/practical	50	40	10	4	2	6
3.	503	Sport Nutrition (Psychology & Counseling)	Theory	50	50	-	4	-	4
4.	504	Clinical Testing / Food Analysis	Theory	50	50	-	4	-	4
5.	505	Food Quality Control	Theory	50	50	-	4	-	4
6.	506	Lab work- Sport Nutrition (Psychology & Counseling)	practical	50	-	50	-	4	4
7.	507	Lab work - Clinical Testing / Food Analysis	practical	50	-	50	-	4	4
8.	508	Lab work - Food Quality Control	practical	50	-	50	-	4	4
9.	509	Health Survey		50	-	50	-	-	-

**Structure of Course**  
**B.Voc. - III (Degree) Sem. VI**

Sr. no	Paper no.	Title	Theory/practical/project	Marks	Distribution of Marks		Distribution of Workload (per Week)		
					Theory	practical	Theory	Practical	Total
1.	601	Nutritional Epidemiology	Theory/practical	50	40	10	4	2	6
2.	602	Business Management	Theory/practical	50	40	10	4	2	6
3.	603	Sport Nutrition (Psychology & Counseling)	Theory	50	50	-	4	-	4
4.	604	Clinical Testing / Food Analysis	Theory	50	50	-	4	-	4
5.	605	Food Quality Control	Theory	50	50	-	4	-	4
6.	606	Lab work- Sport Nutrition (Psychology & Counseling)	practical	50	-	50	-	4	4
7.	607	Lab work - Clinical Testing / Food Analysis	practical	50	-	50	-	4	4
8.	608	Lab work - Food Quality Control	practical	50	-	50	-	4	4
9.	609	Health Survey		50	-	50	-	-	-

**Scheme of Teaching : Degree Part III (Degree) Semester - V**

Sr. no	Paper no.	Title	Distribution of Workload (per Week)		
			Theory	Practical	Total
1.	501	Nutritional Epidemiology	4	2	6
2.	502	Research Methodology	4	2	6
3.	503	Sport Nutrition (Psychology & Counseling)	4	-	4
4.	504	Clinical Testing / Food Analysis	4	-	4
5.	505	Food Quality Control	4	-	4
6.	506	Lab work- Sport Nutrition (Psychology & Counseling)	-	4	4
7.	507	Lab work - Clinical Testing / Food Analysis	-	4	4
8.	508	Lab work - Food Quality Control	-	4	4
9.	509	Health Survey	-	-	-
		<b>Total</b>	<b>20</b>	<b>16</b>	<b>36</b>

**Scheme of Teaching : Degree Part III (Degree) Semester - VI**

Sr. no	Paper no.	Title	Distribution of Workload (per Week)		
			Theory	Practical	Total
1.	601	Nutritional Epidemiology	4	2	6
2.	602	Research Methodology	4	2	6
3.	603	Sport Nutrition (Psychology & Counseling)	4	-	4
4.	604	Clinical Testing / Food Analysis	4	-	4
5.	605	Food Quality Control	4	-	4
6.	606	Lab work- Sport Nutrition (Psychology & Counseling)	-	4	4
7.	607	Lab work - Clinical Testing / Food Analysis	-	4	4
8.	608	Lab work - Food Quality Control	-	4	4
9.	609	Health Survey	-	-	-
		<b>Total</b>	<b>20</b>	<b>16</b>	<b>36</b>

<b>Eligibility for Admission</b>	10 + 2 from any faculty or equivalent Diploma /Advanced Diploma in any related stream  Students who have completed certificate course in nutrition and dietetics are eligible for the second year admission to the course of nutrition and dietetics
<b>Eligibility for Faculty</b>	M.Sc./M.B.A.(Agri., Horticulture, Agri. Economics, Agri. Business Management, Plant Pathology, Agri. Engineering, Agri. Extension)with NET / SET/Ph.D. M. A (English) with NET/SET for Business Communication
<b>Eligibility for Laboratory Assistant:</b>	B.Sc.(Agri.)/ Diploma in Agriculture
<b>Staffing Pattern</b>	: In 1 <sup>st</sup> Year of B. Voc. - 1 Full Time and 1 Part Time Lecturer and 1 CHB Lecturer for Business Communication
<b>Laboratory Assistant</b>	: For 1 <sup>st</sup> Year of B. Voc. - 1 Part-time

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## **CREDIT SYSTEM FOR B. Voc. – Nutrition and Dietetics**

### **Credit system:**

Education at the Institute is organized around the semester-based credit system of study. The type of credit will be credit by theory and practical examination. The prominent features of the credit system are a process of continuous evaluation of a student's performance/progress and flexibility to allow a student to progress at an optimum pace suited to his/her ability or convenience, subject to fulfilling minimum requirements for continuation. A student's performance/progress is measured by the number of credits that he/she has earned, i.e. completed satisfactorily. Based on the course credits and grades obtained by the student, grade point average is calculated. A minimum grade point average is required to be maintained for satisfactory progress and continuation in the programme. Also a minimum number of earned credits and a minimum grade point average should be acquired in order to qualify for the degree.

All programmes are defined by the total credit requirement and a pattern of credit distribution over courses of different categories.

### **Course credits assignment:**

Each course has a certain number of credits assigned to it depending upon its lectures and laboratory contact hours in a week. This weight age is also indicative of the academic expectation that includes in-class contact and self-study outside of class hours.

- a. One credit would mean equivalent to 15 periods for lectures, practical's/workshop.
- b. For internship/ field work, the credit weight age for equivalent hours shall be equal of that for lecture / practical.

The credits for each of the year of B. Voc. Course will be as follows:

<b>Level</b>	<b>Awards</b>	<b>Normal calendar duration</b>	<b>Skill Component Credits</b>	<b>General Education Credits</b>
Year 1	Diploma	Two Semesters	36	24
Year 2	Advanced Diploma	Four Semesters	36	24
Year 3	B. Voc.	Six Semesters	36	24
<b>Total</b>			108	72

**Subject wise credit assignment for B. Voc. – Part II (Diploma) Semester – I**

Sr No	Paper No.	Title	Theory/ Practical/ Project	Marks (Total)	Distribution of Marks		Credits	
					Theory	Practical	Theory	Practical
1	101	Business Communication- I	Theory /Practical	50	40	10	3	2
2	102	Fundamental of food science- I	Theory /Practical	50	40	10	3	2
3	103	Human anatomy/physiology- I	Theory	50	50	--	3	--
4	104	Basic nutrition- I	Theory	50	50	--	3	--
5	105	Clinical nutrition/Diet therapy - I	Theory	50	50	--	3	--
6	106	Lab work – Human anatomy- I	Practical	50	--	50	--	3
7	107	Lab work – basic nutrition - I	Practical	50	--	50	--	3
8	108	Lab work – Clinical nutrition/ Diet therapy - I	Practical	50	--	50	--	3
9	109	Project	--	50	--	50	--	2

**Subject wise credit assignment for B. Voc. – Part I (Diploma) Semester – II**

Sr No	Paper No.	Title	Theory/ Practical/ Project	Marks (Total)	Distribution of Marks		Credits	
					Theory	Practical	Theory	Practical
1	201	Business Communication- II	Theory /Practical	50	40	10	3	2
2	202	Fundamental of food science-II	Theory /Practical	50	40	10	3	2
3	203	Human anatomy /physiology-II	Theory	50	50	--	3	--
4	204	Basic nutrition-II	Theory	50	50	--	3	--
5	205	Clinical nutrition/Diet therapy - II	Theory	50	50	--	3	--
6	206	Lab work – Human anatomy - II	Practical	50	--	50	--	3
7	207	Lab work – basic nutrition II	Practical	50	--	50	--	3
8	208	Lab work – Clinical nutrition/ Diet therapy - II	Practical	50	--	50	--	3
9	209	Project	--	50	--	50	--	2

*\*For Project/Industrial visit /study tour /internship, the workload includes self-study outside of class hours i.e.4 lectures per week.*

## Evaluation system:

### 1. Standard of passing

The maximum credits for B. Voc. Hotel Management and Catering Technology semester course (of six semesters) will be  $30 \times 6 = 180$  credits.

To pass in each paper students are required to obtain 4 grade points in each paper, it means 18 to 20 Marks for 50 Marks Theory / Practical papers, 14.08 to 16 for 40 Marks Theory papers and 04 marks for 10 Marks Practical papers.

### 2. Assessment of Project / Industrial visit /study tour /Internship Report

- i) The Project/Industrial visit/study tour/Internship report must be submitted by the prescribed date usually two weeks before the end of academic session of the semester.
- ii) It is desirable that the topics for Project/Industrial visit/study tour/Internship report shall be assigned by the end of previous semester.
- iii) The Project/Industrial visit/study tour/Internship report and its presentation shall be evaluated by the coordinator of the course and concerned faculty.

### 3. Grade point for Theory/Practical/ Project / Industrial visit /study tour /Internship Report

#### • Table –I: for 50 Marks Theory or Practical

Grade Point	Marks out of	Marks obtained	Grade	Description of performance
0	50	0.0 to 2.5	D	Unsatisfactory
1	50	2.6 to 5.0		
1.5	50	5.1 to 7.5		
2	50	7.6 to 10.0		
2.5	50	10.1 to 12.5		
3	50	12.6 to 15.0		
3.5	50	15.1 to 17.5		
4	50	17.6 to 20.0		
4.5	50	20.1 to 22.5	C	Fair
5	50	22.6 to 25.0	B	Satisfactory
5.5	50	25.1 to 27.5		
6	50	27.6 to 30.0	B+	Good
6.5	50	30.1 to 32.5		
7	50	32.6 to 35.0	A	Very Good
7.5	50	35.1 to 37.5		
8	50	37.6 to 40.0	A+	Excellent
8.5	50	40.1 to 42.5		
9	50	42.6 to 45.0	O	Outstanding
9.5	50	45.1 to 47.5		
10	50	47.6 to 50.0		

• **Table No-II: for 40 Marks Theory and for 10 Marks Practical**

Grade Point	Marks out of	Marks obtained	Grade	Description of performance
0.00	40	0.0 to 2.0	D	Unsatisfactory
1	40	2.08 to 4.0		
1.5	40	4.08 to 6.0		
2	40	6.08 to 8.0		
2.5	40	8.08 to 10.0		
3	40	10.08 to 12.0		
3.5	40	12.08 to 14.0		
4	40	14.08 to 16.0	C	Fair
4.5	40	16.08 to 18.0		
5	40	18.08 to 20.0	B	Satisfactory
5.5	40	20.08 to 22.0		
6	40	22.08 to 24.0	B <sup>+</sup>	Good
6.5	40	24.08 to 26.0		
7	40	26.08 to 28.0	A	Very Good
7.5	40	28.08 to 30.0		
8	40	30.08 to 32.0	A <sup>+</sup>	Excellent
8.5	40	32.08 to 34.0		
9	40	34.08 to 36.0	O	Outstanding
9.5	40	36.08 to 38.0		
10	40	38.08 to 40.0		
Grade Point	Marks out of	Marks obtained	Grade	Description of performance
0.00	10	0.0 to 0.5	D	Unsatisfactory
1	10	0.52 to 1.0		
1.5	10	1.02 to 1.5		
2	10	1.52 to 2.0		
2.5	10	2.02 to 2.5		
3	10	2.52 to 3.0		
3.5	10	3.02 to 3.5		
4	10	3.52 to 4.0	C	Fair
4.5	10	4.02 to 4.5		
5	10	4.52 to 5.0	B <sup>+</sup>	Satisfactory
5.5	10	5.02 to 5.5		
6	10	5.52 to 6.0	B	Good
6.5	10	6.02 to 6.5		
7	10	6.52 to 7.0	A	Very Good
7.5	10	7.02 to 7.5		
8	10	7.52 to 8.0	A <sup>+</sup>	Excellent
8.5	10	8.02 to 8.5		
9	10	8.52 to 9.0	O	Outstanding
9.5	10	9.02 to 9.5		
10	10	9.52 to 10.0		

### Calculation of SGPA and CGPA-

1. Semester Grade Point Average (SGPA) =  $\frac{\Sigma (\text{course credits in passed courses X earned grade points})}{\Sigma (\text{Course credits in registered courses})}$

2. Cumulative Grade Point Average =  $\frac{\Sigma (\text{course credits in passed courses X earned grade points}) \text{ of all Semesters}}{\Sigma (\text{Course credits in registered courses}) \text{ of all Semesters}}$   
(CGPA)

3. At the end of each year of B. Voc. Program, student will be placed in any one of the divisions as detailed below:

### SGPA and CGPA Table

Grade Point	Grade	Description of performance
0.00 to 3.49	D	Unsatisfactory
3.5to 4.49	C	Fair
4.5 to 5.49	B	Satisfactory
5.5 to 5.99	B <sup>+</sup>	Good
6.0 to 6.99	A	Very Good
7.0 to 8.49	A <sup>+</sup>	Excellent
8.5 to10.00	O	Outstanding

- I<sup>st</sup> Class with distinction: CGPA > 7.0 and above
- I<sup>st</sup> Class: CGPA > 6.0 and < 7.0
- II<sup>nd</sup> Class: CGPA > 5.0 and < 6.0
- Pass Class: CGPA > 4.0 and < 5.0
- Fail: CGPA < 4.0



**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B. Voc. Part – I, Semester - I**  
**Nutrition and Dietetics**  
**Paper – 101 : Business Communication-I**  
**Total Workload:** 06 lectures per week of 60 min.

**Distribution of Workload:**

Theory: 04 lectures per week  
Practical: 02 lectures per week per batch of 20 students

**Units Prescribed for Theory:**

Marks:40

**Unit- I: Use of English in Business Environment.**

Business Vocabulary: Vocabulary for banking, marketing and for maintaining public relations.

What is a sentence? Elements of a sentence.

Types of sentence: Simple, compound, complex.

**Unit- II: Writing a Letter of Application and CV/Resume**

Structure of a letter of application for various posts CV/  
Resume and its essentials

**Unit- III: Presenting Information / Data.**

Presenting information/data using graphics like tables, pie charts, tree diagrams, bar diagrams, graphs, flowcharts

**Unit - IV: Interview Technique**

Dos and don'ts of an interview preparing for an interview

Presenting documents Language used in an interview

**Practical : Based on the theory units:**

Marks: 10

**Reference Books:**

- Sethi, Anjanee & Bhavana Adhikari. *Business Communication*. New Delhi: Tata Mc Graw Hill Tickoo, Champa & Jaya Sasikumar. *Writing with a Purpose*. New York: OUP, 1979.
- Sonie, Subhash C. *Mastering the Art of Effective Business Communication*. New Delhi: Student Aid Publication, 2008.
- Herekar, Prakash. *Business Communication*. Pune: Mehta Publications, 2007.
- Herekar, Prakash. *Principals of Business Communication*. Pune: Mehta Publi. 2003.

**Pattern of a Question Paper**

**B. Voc. Part-I**

**Business Communication-I**

**Semester-I Paper:I**

**Time: 2 hours**

**Total Marks: 40**

Q.1 Do as directed. Question items on **Unit 1** to be asked. (10 out of 12) 10

Q.2 Write a letter of application. 10

**OR**

Draft a CV/ Resume for a particular post.

Q.3 Present a given information or data using a table/chart/pie diagram, etc. 10  
(Any one diagram to be drawn.)

Q. 4 Fill in the blanks in the given interview. 10

**Practical Evaluation:**

Marks: 10

Oral and Presentation based on the units prescribed.

**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B. Voc. Part – I, Semester - I**  
**Nutrition and Dietetics**  
**Paper – 102 : Fundamentals of Food Science**  
**Total Workload:** 06 lectures per week of 60 min.

**Distribution of Workload:**

Theory: 04 lectures per week  
Practical: 02 lectures per week per batch of 20 students

Marks:40

**Unit I : Introduction to food science**

- Definition of food, food science
- Study of food science
- Functions of food
- 

**Unit II : Food Groups**

- Based on Food science
- Based on ICMR
- Based on Basic Five Group.

**Unit III : Cooking food Methods**

- Objectives and importance of food cooking Methods
- Classification of cooking methods
- Changes due to cooking in the following food groups: Milk and Milk products, eggs, meat, poultry, sea food,

**Unit IV: Food processing and preservation**

- Principles of food preservation
- Importance of food preservation
- Methods of preservation – Dehydration, freezing and canning, radiation, use of microwaves, home-scale methods of preservation and fermentation.

**Practical : Based on the theory units:**

Marks: 10

**Reference Books:**

- Chakroborty (1988). Post Harvest Technology of Cereals, Pulses and Oilseeds, (revised Ed.), Oxford & IBH publishing Co. Pvt. Ltd.
- Charley, H (1982), Food Science, (2nd), John Wiley & Sons Publication
- Frazier W.C. and Westhoff, D.C. (2004) Food Microbiology, TMH, New Delhi.
- Girdharilal, siddappaa, G.S. and Tanden, G.I. (1998), Preservation of fruits and vegetables, ICAR, New Delhi.
- Raw I. S. (2013), Food Quality Evaluation (1st Ed.)

**Scheme of Internal Practical Evaluation:**  
**Each one 2 practical's**

Marks: 10

1. Introduction to equipments used in laboratory.
2. weight and Measures of raw and cooked food.
3. preparation of recipes from the boiling method.
4. preparation of recipes from the roasting method.
5. preparation of recipes from Baking method.
6. preparation of recipes from combination method.
7. preparation of food product by any preservation method

**SHIVAJI UNIVERSITY, KOLHAPUR**

**B. Voc. Part – I, Semester - I**

**Nutrition and Dietetics**

**Paper – 103 : Human Anatomy**

**Total Workload:** 08 lectures per week of 60 min.

**Distribution of Workload:**

Theory: 04 lectures per week  
Practical: 04 lectures per week per batch of 20 students

Marks:50

**Unit I : Lower Extremity**

Abdomen -Quadrants of abdomen,  
Stomach and duodenum,  
Liver, Spleen  
Pancreas  
Small intestine, large intestine

**Unit II: System**

- Male Reproduction System
- Female reproduction System
- Bones of Lower Limb
- Muscles of Lower Limbs

**Unit III: Renal System**

- Physiological anatomy: nephrons – cortical and juxtamedullary. Juxtaglomerular apparatus, blood flow and its regulation, function of kidneys.
- Mechanism of Urine formation, Globular Filtration ,GFR, Insulin Clearance, Concentration and dilution of Urine, Acid base balance
- Endocrine system  
Introduction, functions, local Hormones

**Unit IV: Reproduction System**

- Introduction ,Sex determination, sex differentiation
- Male and female reproduction system ,functions of testes, ovaries and uterus , menstrual cycle, menarche, menopause
- CNS and ANS
- Cerebellum, Thalamus and hypothalamus, nuclei functions
- Special senses

**Practical : Based on the theory units:**

Marks: 10

**Reference Books:**

- SNELL (Richard S), Clinical Anatomy for Medical Students. Ed. 5 Little Brown and Company Boston, 1995.
- MOORIE (Kieth L.) Clinically oriented Anatomy Ed. 3 williams and wilkins Baltimore 1952.
- Datta A. K. Essentials of human Anatomy : Head and Neck & Ed. 2 Vol. II Current Book International Calcutta 1954.
- SING (Inderbir). Textbook of anatomy with colour atlas : introduction, osteology upper extremity, Vol. I, JP Brothers, New Delhi 1996.
- B.D. CHAURASIA'S Human Anatomy - Regional, ANO Applied, Volume I, Volume II and Volume III.

**Scheme of Internal Practical Evaluation:  
Each one 2 practical's**

Marks: 10

1. Determination of RBC and WBC count
2. Examination of Radial pulse
3. Recording of blood pressure
4. Normal ECG
5. Frog experiments (Kymograph, heart ,liver, Muscle, trough, Stimulator.)

**SHIVAJI UNIVERSITY, KOLHAPUR**

**B. Voc. Part – I, Semester - I**

**Nutrition and Dietetics**

**Paper – 104 : Basic Nutrition**

**Total Workload:** 08 lectures per week of 60 min.

**Distribution of Workload:**

Theory: 04 lectures per week  
Practical: 04 lectures per week per batch of 20 students

Marks:50

**Basic Nutrition**

**Objectives**

- To create a better understanding of the basic aspects of human nutrition by providing information on the current concepts of nutritional principles
- To give a simple account of the metabolism and functions of the major dietary constituents and their nutritional and clinical importance.
- To study the interrelationships between nutrients along with their recommended allowances and food sources so as to enable students to become aware of the importance of a balanced diet based on sound nutritional

**Unit I : Introduction to Nutrition,**

- Definitions: Food, nutrition, Health, Nutrients and functions of Nutrients, different status of nutrition, signs of good and poor nutritional status,
- Functions, digestion, absorption and metabolism of food  
Buccal digestion, gastric digestion and intestinal digestion, factors that affect digestion, absorption and metabolism, Five food groups, dietary guidelines and food pyramid
- Energy Metabolism: Introduction, unit of measurement, energy value of food-calorimetric or Bi-proximate composition; energy needs of the body- reference man and reference woman; basal metabolic rate, factors affecting the BMR,RDA

**Unit II : Carbohydrates**

- Introduction, classification and functions of carbohydrates,
- Digestion, absorption and metabolism, deficiency, excess, RDA and source
- Role of dietary fiber in prevention and treatment of diseases

**Unit III : Lipids:**

- Introduction, classification of lipids, functions of fat,
- Digestion, absorption and metabolism of fat,
- Deficiency, excess, food sources and RDA

**Unit IV : Proteins:**

- Introduction, classifications of proteins, nutritional classification of amino acids protein quality - biological value, net protein utilization, protein efficiency ratio. Function,
- Digestion, absorption and metabolism of protein
- Deficiency, excess sources and requirements.

**Practical : Based on the theory units:**

Marks: 10

**Reference Books:**

- Agarwal A, & Udipi S.A. (2014). Text Book of Human Nutrition. New Delhi, Jaypee Brothers Medical Publisher (P) Ltd.
- Carolyn, D. (2013) Nutrition Decision, Burlington : Jones & Barlett learning.
- Dunn, C (2013). Nutrition Decisions Burlington : Jones & Barlett publishers.
- Edin, G & Golanty, E (2004) Health and Wellness, (8<sup>th</sup> Ed.) Burlington : Jones & Barlett publishers.
- Gopalan, C, Rama S & Balasubramaniam, S.C. (2004) Nutritive Value of Indian Foods, Hyderabad, NIN, ICMR.
- Joshi, S.A. (2000) Nutrition and Dietetics (8<sup>th</sup> Ed.) New Delhi, TATA McGraw Hill Publishing Co. Ltd.

**Scheme of Internal Practical Evaluation:**

Marks: 10

**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B. Voc. Part – I, Semester - I**  
**Nutrition and Dietetics**  
**Paper – 105 : Clinical Nutrition & Diet Therapy**  
**Total Workload: 08 lectures per week of 60 min.**

**Distribution of Workload:**

Theory: 04 lectures per week  
Practical: 04 lectures per week per batch of 20 students

Marks:50

**Clinical nutrition Or Diet Therapy Or applied nutrition Or Public health**

**Objectives**

- To enable the students to understand Nutrition and Health situations in India.
- Their role as a dietitian in improving the nutritional and Health Status of the vulnerable groups and the overall community.
- Acquire skills in assessing Nutritional status of the people, skills in communications and planning, organizing abilities required for conducting nutrition education programmes
- Develop the right attitudes towards working in the communities.

**Unit I : Relation of health and nutrition**

- Concept of Health, Nutrition and Public Health Nutrition
- Demographic trends in India and the significance of certain indices of Health and Nutrition situation of a community. (IMR, MMR, TFR, Birth rate, Death rate, Life expectancy etc.)
- Major Nutritional problems in developing countries – PEM, Night blindness, Nutritional anaemia, Endemic, Goitre, Rickets, Osteomalacia, Beriberi, Pellagra etc.

**Unit II : Role of a dietician**

- Education and personal qualifications,
- Role and responsibilities of a dietitian, nutrition counseling
- Professional ethics and obligations, Career opportunities for dietitians

**Unit III : Dietary surveys**

- Methods, ways of interpretations
- Analysis, recommendations based on survey findings

**Unit IV : Nutritional status**

**Assessment of Nutritional status** – Nutritional Anthropometry, Biochemical assessment and **observations for clinical signs** – Interpretations of the result, comparisons with the standards, **Suggestions/ recommendations** – growth monitoring for children below 10 years. 15  
**Diet Therapy** – rationale for diet therapy (The normal diet, Modifications of the diet to the light diet, soft diet, full liquid diet, clear liquid diet, Tube feedings);  
**Routes for diet therapy** – enteral and parental; use of biochemical parameters in the planning of diets.

**Practical : Based on the theory units:**

Marks: 10



**Reference Books:**

- Anderson, Liennea, Dibble, Marjarie, Turkki, P.R. Mitchell, Helen & Rynbergen, Henderika (1982), "Nutrition in Health and Disease" 17th Edition J.B. Lippincott Co. Philadelphia.
- Antia F. P. (1989) "Clinical Dietetics and Nutrition" 3rd Edition Oxford University, Press, Bombay.
- Bennion Marion (1979) "Clinical Nutrition" Harper and Row Publishers Inc., New York.
- Swaminathan M.S.1985 Essential of foods and nutrition, the Bangalore Printing & Publishing Company Ltd.
- Shukla P.K. (1982) Nutritional Problems in India, Prentice - Hall of India, Private Limited, New Delhi.
- Barbara Luke (1986) Principles of Nutrition and Diet therapy, Little, Brown and Company, Boston.

**Scheme of Internal Practical Evaluation:**

Marks: 10

**SHIVAJI UNIVERSITY, KOLHAPUR**

**Practical Syllabus**

**B. Voc. Part – I, Semester - I**

**Nutrition and Dietetics**

**Paper – 106: Lab Work - Human Anatomy - I**

Total Workload: 06 Total Marks - 50 Practical - 4 Lectures / Week / Batch of 20 Students

**Each one 2 practical's**

1. Upper extremity including surface Anatomy
2. Head, Spinal cord, Neck and Brain Including Surface Anatomy
3. Embryology – models, chart and X- rays
  - Demonstration of the muscles of the whole body and organs in thorax and abdomen in a cadaver
  - Surface making of the lung, pleura, fissures and lobes of lungs, heart, liver, spleen

**Scheme of Practical Evaluation**

**50 Marks**

**Internal Practical Evaluation**

- |   |          |
|---|----------|
| 1) Prepare any one practical from the above | 20 Marks |
| 2) Practical record book                    | 20 Marks |
| 3) Viva - Voce                              | 10 Marks |

**Reference Books:**

- SNELL (Richard S), Clinical Anatomy for Medical Students. Ed. 5 Little Brown and Company Boston, 1995.
- MOORIE (Kieth L.) Clinically oriented Anatomy Ed. 3 williams and wilkins Baltimore 1952.
- Datta A. K. Essentials of human Anatomy : Head and Neck & Ed. 2 Vol. II Current Book International Calcutta 1954.
- SING (Inderbir). Textbook of anatomy with colour atlas : introduction, osteology upper extremity, Vol. I, JP Brothers, New Delhi 1996.
- B.D. CHAURASIA'S Human Anatomy - Regional, ANO Applied, Volume I, Volume II and Volume III.

**SHIVAJI UNIVERSITY, KOLHAPUR**

**Practical Syllabus**

**B. Voc. Part – I, Semester - I**

**Nutrition and Dietetics**

**Paper – 107: Lab Work - Basic Nutrition - I**

Total Workload: 06 Total Marks - 50 Practical - 4 Lectures / Week / Batch of 20 Students

**Each one 2 practical's**

1. Food types and source of nutrients.
2. Prepared a dish rich in carbohydrates
3. prepared a dish rich in protein.
4. Prepared a dish rich in fat.
5. Prepared a dish rich in dietary fiber.
6. Calculate the energy value of food product by using calorimeter.

**Scheme of Practical Evaluation**

**50 Marks**

**Internal Practical Evaluation**

- |   |          |
|---|----------|
| 1) Prepare any one practical from the above | 20 Marks |
| 2) Practical record book                    | 20 Marks |
| 3) Viva - Voce                              | 10 Marks |

**Reference Books:**

- Agarwal A, & Udipi S.A. (2014). Text Book of Human Nutrition. New Delhi, Jaypee Brothers Medical Publisher (P) Ltd.
- Carolyn, D. (2013) Nutrition Decision, Burlington : Jones & Barlett learning.
- Dunn, C (2013). Nutrition Decisions Burlington : Jones & Barlett publishers.
- Edin, G & Golanty, E (2004) Health and Wellness, (8<sup>th</sup> Ed.) Burlington : Jones & Barlett publishers.
- Gopalan, C, Rama S & Balasubramaniam, S.C. (2004) Nutritive Value of Indian Foods, Hyderabad, NIN, ICMR.
- Joshi, S.A. (2000) Nutrition and Dietetics (8<sup>th</sup> Ed.) New Delhi, TATA McGraw Hill Publishing Co. Ltd.

**SHIVAJI UNIVERSITY, KOLHAPUR**

**Practical Syllabus**

**B. Voc. Part – I, Semester - I**

**Nutrition and Dietetics**

**Paper – 108: Lab Work - Clinical Nutrition & Diet Therapy - I**

Total Workload: 06 Total Marks - 50 Practical - 4 Lectures / Week / Batch of 20 Students

**Each one 2 practical's**

1. Nutritional survey
2. Diet survey.
3. Assessment of nutritional status techniques – anthropometrical, clinical methods ,  
biochemical methods
4. Prepared a soft diet
5. Prepared a full liquid diet.
6. Prepared a clear liquid diet.
7. Biochemical parameters in the planning of diets.

**Scheme of Practical Evaluation**

**50 Marks**

**Internal Practical Evaluation**

- |   |          |
|---|----------|
| 1) Prepare any one practical from the above | 20 Marks |
| 2) Practical record book                    | 20 Marks |
| 3) Viva - Voce                              | 10 Marks |

**Reference Books:**

- Anderson, Liennea, Dibble, Marjarie, Turkki, P.R. Mitchell, Helen & Rynbergen, Henderika (1982), "Nutrition in Health and Disease" 17th Edition J.B. Lippincott Co. Philadelphia.
- Antia F. P. (1989) "Clinical Dietetics and Nutrition" 3rd Edition Oxford University, Press, Bombay.
- Bennion Marion (1979) "Clinical Nutrition" Harper and Row Publishers Inc., New York.
- Swaminathan M.S.1985 Essential of foods and nutrition, the Bangalore Printing & Publishing Company Ltd.
- Shukla P.K. (1982) Nutritional Problems in India, Prentice - Hall of India, Private Limited, New Delhi.
- Barbara Luke (1986) Principles of Nutrition and Diet therapy, Little, Brown and Company, Boston.

**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B. Voc. Part – I, Semester - II**  
**Nutrition and Dietetics**  
**Paper – 201 : Business Communication-II**  
**Total Workload: 06 lectures per week of 60 min.**

**Distribution of Workload:**

Theory: 04 lectures per week

Practical: 02 lectures per week per batch of 20 students

**Units Prescribed for Theory:**

Marks:40

**Unit- I: Group Discussion**

Preparing for a Group Discussion  
Initiating a Discussion  
Eliciting Opinions, views etc. Expressing Agreement /Disagreement  
Making Suggestions; Accepting and Declining Suggestions  
Summing up.

**Unit- II: Business Correspondence**

Writing Memos, e-mails, complaints, inquiries, etc.  
Inviting Quotations Placing Orders, Tenders, etc

**Unit- III: English for Negotiation.**

Business Negotiations  
Agenda for Negotiation  
Stages of Negotiation

**Unit - IV: English for Marketing**

Describing/Explaining a Product/Service  
Promotion of a Product  
Dealing/ bargaining with Customers  
Marketing a Product/Service: Using Pamphlets, Hoardings,  
Advertisement, Public Function/Festival

**Practical: Based on the theory units**

Marks: 10

**Reference Books:**

- Herekar, Prakash. *Business Communication*. Pune: Mehta Publications, 2007.
- Herekar, Prakash. *Principals of Business Communication*. Pune: Mehta Publications, 2003.
- John, David. *Group Discussions*. New Delhi: Arihant Publications.
- Kumar, Varinder. *Business Communication*. New Delhi: Kalyani Publishers, 2000.
- Pardeshi, P.C. *Managerial Communication*. Pune: Nirali Prakashan, 2008.
- Pradhan, N. S. *Business Communication*. Mumbai: Himalaya Publishing House, 2005.
- Rai, Urmila & S. M. Rai. *Business Communication*. Mumbai: Himalaya Publishing House, 2007.
- Sethi, A. & B. Adhikari. *Business Communication*. New Delhi: Tata Mc Graw Hill.
- Sonie, Subhash C. *Mastering the Art of Effective Business Communication*. New Delhi: Student Aid Publication, 2008.
- Tickoo, Champa & Jaya Sasikumar. *Writing with a Purpose*. New York: OUP, 1979.
- Whitehead, Jeffrey & David H. Whitehead. *Business Correspondence*. Allahabad: Wheeler publishing 1996

**Pattern of a Question Paper**  
**B. Voc. (Diploma) Part-I, Semester-II**  
**Paper-201:Business Communication-II**

**Time:2hours**

**Total Marks:40**

- |      |  |    |
|------|--|----|
| Q. 1 | Fill in the blanks in the following Group Discussion.<br>(On <b>Unit 5</b> ) (10 out 12)             | 10 |
| Q. 2 | Attempt <b>ANY ONE</b> of the following ( <b>A</b> or <b>B</b> ):<br>(On <b>Unit 6</b> )             | 10 |
| Q. 3 | Fill in the blanks with appropriate responses:<br>(On <b>Unit 7</b> )                                | 10 |
| Q. 4 | Attempt <b>ANY ONE</b> of the following ( <b>A</b> or <b>B</b> ):<br>(On <b>Unit 8</b> ) (10 out 12) | 10 |

**Practical Evaluation:**

Marks: 10

Oral and Presentation based on the units prescribed.

**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B. Voc. Part – I, Semester - II**  
**Nutrition and Dietetics**  
**Paper – 202 : Fundamental of Food Science-II**  
**Total Workload:** 06 lectures per week of 60 min.

**Distribution of Workload:**

Theory: 04 lectures per week  
Practical: 02 lectures per week per batch of 20students

Marks:40

**Unit I : Food storage and spoilage**

- Raw and cooked food storage
- Classification and applications Food spoilage and factors affecting food spoilage
- Food acceptability and sensory evaluation
- 

**Unit II : Food quality**

- Introduction of food quality
- Factors affecting food quality.
- Control of food quality.
- Role of packaging in maintaining quality of processed foods

**Unit III : Processed foods**

- Use of processed foods and their contribution to the daily diet
- Use of processing technology for breakfast cereals, Alcoholic beverages, vegetable and fruit products, flesh foods, milk and milk products, egg and egg products.
- Use of food additives

**Unit IV : Concept of Diet**

- Concepts of an adequate diet,
- food budget proportionate cost of various foods in relation to their nutrient content.
- Principles involved in Planning diets.

**Practical : Based on the theory units:**

Marks: 10

**Reference Books:**

- Early, R (1995) Guide to Quality Management system for the food industry, Blackie, academic and professional, London.
- Food safety and standards Act 2006, Rules 2011, Regulation 2011, International law book company.
- Frazier W. C. and Westhoor D.C. (2004) food microbiology, TMH. New Delhi.
- Garbutt, J. (1997) Essential or Food microbiology, Arnold, London.
- Jay. J. M. (2000) Modern Food Microbiology, CBS Publication, New Delhi.

**Practical Evaluation:**  
**Each one 2 practical's**

Marks: 10

1. Check the storage capacity of any raw food.
2. Check the storage capacity of any cooked food.
3. Make a album of packaging materials.
4. Prepare a food product by using any food processing technology
5. Preservation of food by using food additives.
6. Use a principle involved in planning a diets.
7. visit to food preservation unit.



**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B. Voc. Part – I, Semester - II**  
**Nutrition and Dietetics**  
**Paper – 203: Human Physiology II**  
**Total Workload: 08 lectures per week of 60 min.**

**Distribution of Workload:**

Theory: 04 lectures per week  
Practical: 04 lectures per week per batch of 20 students

Marks:50

**Unit I : Introduction of Human Anatomy**

Tissues of body

**Unit II : Upper Extremity**

- Arteries of the body
- Veins of the body
- Head, Neck and Brain
- Special sense (Skin, eyes , nose ,ears ,tongue )
- Bone of Upper limb and muscle of upper limb
- Thorax (Thoracic Wall, Part of Heart, Part of lungs, Trachea, Esophagus)

**Unit III : Human Physiology**

- Blood and Nerve Muscle
- Composition and function of blood
- Introduction of nerve muscle : resting membrane potential .  
Action Potential –ionic basis and properties
- Nerve : structure and function of neurons
- Cardiovascular system- functions and Physiological anatomy, cardiac Cycle

**Unit IV : Systems**

- Respiratory system (Introduction, functions, Pulmonary Circulation ,ventilation – perfusion ratio and its importance )
- Digestive System (Introduction ,anatomy and nerve supply of alimentary canal, Enteric nervous system , salivary secretion – saliva ,composition ,function regulation , mastication
- Mechanism of Defecation

**Practical : Based on the theory units:**

Marks: 10

**Reference Books:**

- Guyton A.C., Hall J.E., Text Book OR Medical Physiology (1996), 9th Edition Prism Books Pvt. Ltd. Bangalore.
- Winwood, Sears Anatomy and physiology for Nurses (1988)m Edward Arnold. London.
- Chattarjee C.C., Text book of Medical Physiology (1988) W.B. Saeinder's Co. London.
- Tortora G.J. Grabowski RS. Principles of anatomy and physiology (2000) 9th edition Tolhn Wiley and sans the.
- Western T. Atlas OR Anatomy (1988), Sunnie books, Publishers, London.

**Practical Evaluation:**

Marks: 10

**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B. Voc. Part – I, Semester - II**  
**Nutrition and Dietetics**  
**Paper – 204 : Basic Nutrition-II**  
**Total Workload: 08 lectures per week of 60 min.**

**Distribution of Workload:**

Theory: 04 lectures per week  
Practical: 04 lectures per week per batch of 20 students

Marks:50

**Unit I : Vitamins**

- Classification of vitamins ,characteristics of vitamins
- Fat soluble vitamins, A, D, E and K - introduction, function, deficiency, sources, RDA
- Water soluble vitamins- B complex and C-introduction, functions, deficiency, sources, RDA

**Unit II : Minerals:**

- Classification and General functions of minerals,
- Major minerals
- Minor minerals

**Unit III : Water**

- Introduction, functions, water, daily intake of water, daily loss of water, body water,
- Water balance, deficiency of water, retention of water, daily requirements.
- Fluid and electrolyte balance, acid –base balance

**Unit IV : Interrelationship between nutrients**

- Protein and energy, vitamin E and PUFA
- Vitamin C and Iron
- Vitamin B12 and Folic acid

**Practical : Based on the theory units:**

Marks: 10

**Reference Books:**

- Sharma O. P. (2005). Geriatric care A textbook of Geriatrics gerontology viva books. Private Limited, New Delhi.
- Watson, R.R. (2001). Handbook of Nutrition in the aged (3rd) CRC Press, Washington D.C.
- Birren J.E. (1996) Encyclopedia of gerontology : age, aging and the aged Vol. 1 & 2 California, USA : Academic Press, INC.
- Bond, J. Coleman P. & Pcaee S. (Eds.) (1993) Ageing in society (2nd Ed.) London : SAGE Publication Ltd.
- Bourne, W & Kauss, S (1985) the aging body - physiological change and psychological consequences New York : Spurger Verlary.

**Practical Evaluation:**

Marks: 10

**SHIVAJI UNIVERSITY, KOLHAPUR**  
**B. Voc. Part – I, Semester - II**  
**Nutrition and Dietetics**  
**Paper – 205: Clinical Nutrition & Diet Therapy**  
**Total Workload: 08 lectures per week of 60 min.**

**Distribution of Workload:**

- Theory: 04 lectures per week  
Practical: 04 lectures per week per batch of 20 students

Marks:50

**Unit I : Health and Nutrition policies**

- Health and Nutrition policies of the Govt. and their implementation and problems encountered.
- Impact of following factors on food consumption and nutritional status of people (Agricultural production, storage distributions, population, science and technology, socio cultural and economic factors.)
- Steps taken by the Govt. and N.G.O.'s to overcome the problem faced due to the above factors

**Unit II : Nutrition Programme**

- Nutrition feeding Programmes in India and their role in Improving Nutritional status of the weaker sections and vulnerable groups of any community ( ANP, SNP, BNP, ICDS, MDM, Vit a prophylaxis, Goitre and anaemic control )  
National and International agencies involved in promoting Nutrition and health status of a community – UNICEF, FAO, WHO, CARE, NIN, CFTRI, ICMR, etc.

**Unit III : Nutrition Extension and Education**

- Objectives, plan and methods of nutrition education.

**Unit IV : Nutrition through Lifecycle**

- Balanced diet, Meal planning, different nutritional status
- RDA and factors affecting RDA
- Nutrition during pregnancy, lactation, infancy, toddlerhood, preschool stage, school going children, adolescence, adults, older adults and old populations.

**Practical : Based on the theory units:**

Marks: 10

**Reference Books:**

- Eva Medved (1986) Food Preparation and theory, Prentice Hall, Inc. Englewood Cliffs, New Jersey.
- Marion Bennion and Osee Hughes (1985) Introductory Foods (6th Edition) Macmillan Publishing Co. Inc. New York. Collier Macmillan Publisher, London.
- Norman N. Potter (1986) Food science 4th Edition Van Nostrand Reinhold Company, New York.
- Shankatal N. Manay and Shadakshara swamy M. (1987) Foods - Facts and Principals Wiley eastern Limited.

**Practical Evaluation:**

Marks: 10

**SHIVAJI UNIVERSITY, KOLHAPUR**

**Practical Syllabus**

**B. Voc. Part – I, Semester - II**

**Nutrition and Dietetics**

**Paper – 206: Lab Work - Human Physiology - II**

Total Workload: 06 Total Marks - 50 Practical - 4 Lectures / Week / Batch of 20 Students

**Each one 2 practical's**

1. Determination of RBC and WBC count
2. Examination of Radial pulse
3. Recording of blood pressure
4. Normal ECG
5. Frog experiments (Kymograph, heart ,liver, Muscle, trough, Stimulator.)

**Scheme of Practical Evaluation**

**50 Marks**

**Internal Practical Evaluation**

- |   |          |
|---|----------|
| 1) Prepare any one practical from the above | 20 Marks |
| 2) Practical record book                    | 20 Marks |
| 3) Viva - Voce                              | 10 Marks |

**Reference Books:**

- Guyton A.C., Hall J.E., Text Book OR Medical Physiology (1996), 9th Edition Prism Books Pvt. Ltd. Bangalore.
- Winwood, Sears Anatomy and physiology for Nurses (1988)m Edward Arnold. London.
- Chattarjee C.C., Text book of Medical Physiology (1988) W.B. Saeinder's Co. London.
- Tortora G.J. Grabowski RS. Principles of anatomy and physiology (2000) 9th edition Tolhn Wiley and sans the.
- Western T. Atlas OR Anatomy (1988), Sunnie books, Publishers, London.

**SHIVAJI UNIVERSITY, KOLHAPUR**

**Practical Syllabus**

**B. Voc. Part – I, Semester - II**

**Nutrition and Dietetics**

**Paper – 207 : Lab Work - Basic Nutrition**

Total Workload: 06 Total Marks - 50 Practical - 4 Lectures / Week / Batch of 20 Students

**Each one 2 practical's**

1. Prepared a dish rich in any fat soluble vitamin( A,D,E,K)
2. Prepared a dish rich in B complex vitamin
3. Prepared a dish rich in Vitamin C
4. Prepared a dish rich in major minerals.
5. Prepared a dish rich in minor minerals.
6. Prepared a dish rich in water content.
7. Prepared a dish rich in protein and energy

**Scheme of Practical Evaluation**

**50 Marks**

**Internal Practical Evaluation**

- |   |          |
|---|----------|
| 1) Prepare any one practical from the above | 20 Marks |
| 2) Practical record book                    | 20 Marks |
| 3) Viva - Voce                              | 10 Marks |

**Reference Books:**

- Sharma O. P. (2005). Geriatric care A textbook of Geriatrics gerontology viva books. Private Limited, New Delhi.
- Watson, R.R. (2001). Handbook of Nutrition in the aged (3rd) CRC Press, Washington D.C.
- Birren J.E. (1996) Encyclopedia of gerontology : age, aging and the aged Vol. 1 & 2 California, USA : Academic Press, INC.
- Bond, J. Coleman P. & Pcaee S. (Eds.) (1993) Ageing in society (2nd Ed.) London : SAGE Publication Ltd.
- Bourne, W & Kauss, S (1985) the aging body - physiological change and psychological consequences New York : Spurger Verlary.



**SHIVAJI UNIVERSITY, KOLHAPUR**

**Practical Syllabus**

**B. Voc. Part – I, Semester - II**

**Nutrition and Dietetics**

**Paper – 208 : Lab Work - Clinical nutrition/Diet therapy**

Total Workload: 06 Total Marks - 50 Practical - 4 Lectures / Week / Batch of 20 Students

**Each one 2 practical's**

1. Planning ,preparation and demonstration of low cost nutrient rich recipes
2. Plan a diet for pregnant, lactating women
3. Plan a diet for different stages of school going children
4. Plan a diet for adults.
5. Plan a diet for Older.
6. Nutrition Education
  - Arrange Nutritional Programme
  - Teaching Aids
  - Nutrition message
  - Street play
7. Visit to different N.G.O's

**Scheme of Practical Evaluation**

**50 Marks**

**Internal Practical Evaluation**

- |   |          |
|---|----------|
| 1) Prepare any one practical from the above | 20 Marks |
| 2) Practical record book                    | 20 Marks |
| 3) Viva - Voce                              | 10 Marks |

**Reference Books:**

- Eva Medved (1986) Food Preparation and theory, Prentice Hall, Inc. Englewood Cliffs, New Jersey.
- Marion Bennion and Osee Hughes (1985) Introductory Foods (6th Edition) Macmillan Publishing Co. Inc. New York. Collier Macmillan Publisher, London.
- Norman N. Potter (1986) Food science 4th Edition Van Nostrand Reinhold Company, New York.
- Shankatal N. Manay and Shadakshara swamy M. (1987) Foods - Facts and Principals Wiley eastern Limited.