



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) (Pharmacognosy) III Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P) /2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 301(36)	Research Methodology and Biostatistics*	4	1	-	100	20	20	140	5
2	Pharmacy	PH208 391(36)	Minor Dissertation (Synopsis submission, Seminar & viva)	-	2	32	200	-	60	260	18
Total				4	3	32	300	-	80	400	23

L- Lecture, T- Tutorial, P- Practical, Duration of Theory paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) (Pharmacognosy) IV Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P)/2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 491(36)	Major Dissertation (Seminar & viva)	-	-	36	400	-	200	600	18
Total				-	-	36	400	-	200	600	18

L- Lecture, T- Tutorial, P-

Practical, Duration of Theory

paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	

**SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI****Faculty of Pharmaceutical Sciences**

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)**M. Pharm Final Year (3rd / 4th semester)****Scheme of Teaching and Examination Master of Pharmacy (M. Pharm)
(Common for All Specializations) (Pharmacology)****III Semester**

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P) /2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 301(34)	Research Methodology and Biostatistics*	4	1	-	100	20	20	140	5
2	Pharmacy	PH208 391(34)	Minor Dissertation (Synopsis submission, Seminar & viva)	-	2	32	200	-	60	260	18
Total				4	3	32	300	-	80	400	23

L- Lecture, T- Tutorial, P- Practical, Duration of Theory paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm)

(Common for All Specializations) (Pharmacology)

III Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P)/2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 491(34)	Major Dissertation (Seminar & viva)	-	-	36	400	-	200	600	18
Total				-	-	36	400	-	200	600	18

L- Lecture, T- Tutorial, P-

Practical, Duration of Theory

paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) (Pharmaceutical chemistry)

III Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P) /2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 301(35)	Research Methodology and Biostatistics*	4	1	-	100	20	20	140	5
2	Pharmacy	PH208 391(35)	Minor Dissertation (Synopsis submission, Seminar & viva)	-	2	32	200	-	60	260	18
Total				4	3	32	300	-	80	400	23

L- Lecture, T- Tutorial, P- Practical, Duration of Theory paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm)

(Common for All Specializations) (Pharmaceutical chemistry)

IV Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P)/2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 491(35)	Major Dissertation (Seminar & viva)	-	-	36	400	-	200	600	18
Total				-	-	36	400	-	200	600	18

L- Lecture, T- Tutorial, P-

Practical, Duration of Theory

paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) (Pharmaceutics) III Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P) /2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 301(33)	Research Methodology and Biostatistics*	4	1	-	100	20	20	140	5
2	Pharmacy	PH208 391(33)	Minor Dissertation (Synopsis submission, Seminar & viva)	-	2	32	200	-	60	260	18
Total				4	3	32	300	20	80	400	23

L- Lecture, T- Tutorial, P- Practical, Duration of Theory paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Subject Code PH208301(33)	Research Methodology & Biostatistics	L=4	T =1	P =	Credits= 5
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
<p>Upon completion of this course the student able to:</p> <ul style="list-style-type: none"> Design Research work Know the application of biostatistics in research work. Understand the guidelines of CPCSEA 	<p>On successful completion of the course, the student will be able to:</p> <p>CO1:- Understand the basic concept of research methodology</p> <p>CO2:- Understand the basic concepts of biostatistics</p> <p>CO3:- Understand the functions of ethics committees in medical research</p> <p>CO4:- Learn the guidelines for developing animal facilities and guidelines for the experimentation on animals</p> <p>CO5: Understand the genesis of bioethics with special reference to Helsinki declaration</p>
<p>UNIT – I: CO1 General Research Methodology: Research, objective, requirements, practical difficulties, review of literature, study design, types of studies, strategies to eliminate errors/bias, controls, randomization, crossover design, placebo, blinding techniques. 10 Hours</p> <p>UNIT – II: CO2 Biostatistics: Definition, application, sample size, importance of sample size, factors influencing sample size, dropouts, statistical tests of significance, type of significance tests, parametric tests (students “t” test, ANOVA, Correlation coefficient, regression), non-parametric tests (wilcoxon rank tests, analysis of variance, correlation, chi square test), null hypothesis, P values, degree of freedom, interpretation of P values. 10 Hours</p> <p>UNIT – III: CO3 Medical Research: History, values in medical ethics, autonomy, beneficence, non-maleficence, double effect, conflicts between autonomy and beneficence/non-maleficence, euthanasia, informed consent, confidentiality, criticisms of orthodox medical ethics, importance of communication, control resolution, guidelines, ethics committees, cultural concerns, truth telling, online business practices, conflicts of interest, referral, vendor relationships, treatment of family members, sexual relationships, fatality. 10 Hours</p>	

2

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

UNIT – IV:

CO4

CPCSEA guidelines for laboratory animal facility: Goals, veterinary care, quarantine, surveillance, diagnosis, treatment and control of disease, personal hygiene, location of animal facilities to laboratories, anesthesia, euthanasia, physical facilities, environment, animal husbandry, record keeping, SOPs, personnel and training, transport of lab animals.

10 Hours

UNIT – V:

CO5

Declaration of Helsinki: History, introduction, basic principles for all medical research, and additional principles for medical research combined with medical care.

10 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1	Biostatistics and Research Methodology	G. Nageswara Rao	2018	Indian Books and Periodicals
2	Pharmaceutical Statistics And Research Methodology	Gowda	2019	Pharma med press
3	Statistical Methods for Research: A Step by Step Approach Using IBM SPSS	K. Kalyanaraman, Hareesh N. Ramanathan, P.N. Harikumar	2016	Atlantic

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1	Research methodology and Biostatistics	Suresh .K. Sharma	2019	Elsevier
2	Research Methodology: Methods and Techniques	C. R. Kothari	2004	New Age International (P) Limited

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) IV Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P)/2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 491(33)	Major Dissertation (Seminar & viva)	-	-	36	400	-	200	600	18
Total				-	-	36	400	-	200	600	18

L- Lecture, T- Tutorial, P-

Practical, Duration of Theory

paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) (Pharmaceutical Chemistry) III Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P) /2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 301(35)	Research Methodology and Biostatistics*	4	1	-	100	20	20	140	5
2	Pharmacy	PH208 391(35)	Minor Dissertation (Synopsis submission, Seminar & viva)	-	2	32	200	-	60	260	18
Total				4	3	32	300	20	80	400	23

L- Lecture, T- Tutorial, P- Practical, Duration of Theory paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Subject Code PH208301(35)	Research Methodology & Biostatistics	L=4	T =1	P =	Credits= 5
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
<p>Upon completion of this course the student should be able to:</p> <ul style="list-style-type: none"> Design Research work To know the application of biostatics in research work. To understand the guidelines of CPCSEA 	<p>On successful completion of the course, the student will be able to:</p> <p>CO1:- To understand the basic concept of research methodology</p> <p>CO2:- To Understand the basic concepts of biostatistics</p> <p>CO3:- To Understand the functions of ethics committees in medical research</p> <p>CO4:- To learn the guidelines for developing animal facilities and guidelines for the experimentation on animals</p> <p>CO5: To Understand the genesis of bioethics with special reference to Helsinki declaration</p>
<p>UNIT – I: CO1 General Research Methodology: Research, objective, requirements, practical difficulties, review of literature, study design, types of studies, strategies to eliminate errors/bias, controls, randomization, crossover design, placebo, blinding techniques. 10 Hours</p> <p>UNIT – II: CO2 Biostatistics: Definition, application, sample size, importance of sample size, factors influencing sample size, dropouts, statistical tests of significance, type of significance tests, parametric tests (students “t” test, ANOVA, Correlation coefficient, regression), non-parametric tests (wilcoxon rank tests, analysis of variance, correlation, chi square test), null hypothesis, P values, degree of freedom, interpretation of P values. 10 Hours</p> <p>UNIT – III: CO3 Medical Research: History, values in medical ethics, autonomy, beneficence, non-maleficence, double effect, conflicts between autonomy and beneficence/non-maleficence, euthanasia, informed consent, confidentiality, criticisms of orthodox medical ethics, importance of communication, control resolution, guidelines, ethics committees, cultural concerns, truth telling, online business practices, conflicts of interest, referral, vendor relationships, treatment of family members, sexual relationships, fatality. 10 Hours</p>	

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

UNIT – IV:

CO4

CPCSEA guidelines for laboratory animal facility: Goals, veterinary care, quarantine, surveillance, diagnosis, treatment and control of disease, personal hygiene, location of animal facilities to laboratories, anesthesia, euthanasia, physical facilities, environment, animal husbandry, record keeping, SOPs, personnel and training, transport of lab animals.

10 Hours

UNIT – V:

CO5

Declaration of Helsinki: History, introduction, basic principles for all medical research, and additional principles for medical research combined with medical care.

10 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1	Biostatistics and Research Methodology	G. Nageswara Rao	2018	Indian Books and Periodicals
2	Pharmaceutical Statistics And Research Methodology	Gowda	2019	Pharma med press
3	Statistical Methods for Research: A Step by Step Approach Using IBM SPSS	K. Kalyanaraman, Hareesh N. Ramanathan, P.N. Harikumar	2016	Atlantic

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1	Research methodology and Biostatistics	Suresh .K. Sharma	2019	Elsevier
2	Research Methodology: Methods and Techniques	C. R. Kothari	2004	New Age International (P) Limited

3

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) IV Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P)/2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 491(35)	Major Dissertation (Seminar & viva)	-	-	36	400	-	200	600	18
Total				-	-	36	400	-	200	600	18

L- Lecture, T- Tutorial, P-

Practical, Duration of Theory

paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) (Pharmacology) III Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P) /2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 301(34)	Research Methodology and Biostatistics*	4	1	-	100	20	20	140	5
2	Pharmacy	PH208 391(34)	Minor Dissertation (Synopsis submission, Seminar & viva)	-	2	32	200	-	60	260	18
Total				4	3	32	300	20	80	400	23

L- Lecture, T- Tutorial, P- Practical, Duration of Theory paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Subject Code PH208301(34)	Research Methodology & Biostatistics	L=4	T =1	P =	Credits= 5
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
<p>Upon completion of this course the student should be able to:</p> <ul style="list-style-type: none"> Design Research work To know the application of biostatistics in research work. To understand the guidelines of CPCSEA 	<p>On successful completion of the course, the student will be able to:</p> <p>CO1:- To understand the basic concept of research methodology</p> <p>CO2:- To Understand the basic concepts of biostatistics</p> <p>CO3:- To Understand the functions of ethics committees in medical research</p> <p>CO4:- To learn the guidelines for developing animal facilities and guidelines for the experimentation on animals</p> <p>CO5: To Understand the genesis of bioethics with special reference to Helsinki declaration</p>
<p>UNIT – I: CO1 General Research Methodology: Research, objective, requirements, practical difficulties, review of literature, study design, types of studies, strategies to eliminate errors/bias, controls, randomization, crossover design, placebo, blinding techniques. 10 Hours</p> <p>UNIT – II: CO2 Biostatistics: Definition, application, sample size, importance of sample size, factors influencing sample size, dropouts, statistical tests of significance, type of significance tests, parametric tests (students “t” test, ANOVA, Correlation coefficient, regression), non-parametric tests (wilcoxon rank tests, analysis of variance, correlation, chi square test), null hypothesis, P values, degree of freedom, interpretation of P values. 10 Hours</p> <p>UNIT – III: CO3 Medical Research: History, values in medical ethics, autonomy, beneficence, non-maleficence, double effect, conflicts between autonomy and beneficence/non-maleficence, euthanasia, informed consent, confidentiality, criticisms of orthodox medical ethics, importance of communication, control resolution, guidelines, ethics committees, cultural concerns, truth telling, online business practices, conflicts of interest, referral, vendor relationships, treatment of family members, sexual relationships, fatality. 10 Hours</p>	

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

UNIT – IV:

CO4

CPCSEA guidelines for laboratory animal facility: Goals, veterinary care, quarantine, surveillance, diagnosis, treatment and control of disease, personal hygiene, location of animal facilities to laboratories, anesthesia, euthanasia, physical facilities, environment, animal husbandry, record keeping, SOPs, personnel and training, transport of lab animals.

10 Hours

UNIT – V:

CO5

Declaration of Helsinki: History, introduction, basic principles for all medical research, and additional principles for medical research combined with medical care.

10 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1	Biostatistics and Research Methodology	G. Nageswara Rao	2018	Indian Books and Periodicals
2	Pharmaceutical Statistics And Research Methodology	Gowda	2019	Pharma med press
3	Statistical Methods for Research: A Step by Step Approach Using IBM SPSS	K. Kalyanaraman, Hareesh N. Ramanathan, P.N. Harikumar	2016	Atlantic

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1	Research methodology and Biostatistics	Suresh .K. Sharma	2019	Elsevier
2	Research Methodology: Methods and Techniques	C. R. Kothari	2004	New Age International (P) Limited

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm)

(Common for All Specializations)

IV Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P)/2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 491(34)	Major Dissertation (Seminar & viva)	-	-	36	400	-	200	600	18
Total				-	-	36	400	-	200	600	18

L- Lecture, T- Tutorial, P-

Practical, Duration of Theory

paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm) (Common for All Specializations) (Pharmacognosy) III Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P) /2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 301(36)	Research Methodology and Biostatistics*	4	1	-	100	20	20	140	5
2	Pharmacy	PH208 391(36)	Minor Dissertation (Synopsis submission, Seminar & viva)	-	2	32	200	-	60	260	18
Total				4	3	32	300	-	80	400	23

L- Lecture, T- Tutorial, P- Practical, Duration of Theory paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Subject Code PH208301(36)	Research Methodology & Biostatistics	L=4	T=1	P=	Credits= 5
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
<p>Upon completion of this course the student should be able to:</p> <ul style="list-style-type: none"> Design Research work To know the application of biostatistics in research work. To understand the guidelines of CPCSEA 	<p>On successful completion of the course, the student will be able to:</p> <p>CO1:- To understand the basic concept of research methodology</p> <p>CO2:- To Understand the basic concepts of biostatistics</p> <p>CO3:- To Understand the functions of ethics committees in medical research</p> <p>CO4:- To learn the guidelines for developing animal facilities and guidelines for the experimentation on animals</p> <p>CO5:- To Understand the genesis of bioethics with special reference to Helsinki declaration</p>
<p>UNIT – I: CO1 General Research Methodology: Research, objective, requirements, practical difficulties, review of literature, study design, types of studies, strategies to eliminate errors/bias, controls, randomization, crossover design, placebo, blinding techniques. 10 Hours</p> <p>UNIT – II: CO2 Biostatistics: Definition, application, sample size, importance of sample size, factors influencing sample size, dropouts, statistical tests of significance, type of significance tests, parametric tests (students “t” test, ANOVA, Correlation coefficient, regression), non-parametric tests (wilcoxon rank tests, analysis of variance, correlation, chi square test), null hypothesis, P values, degree of freedom, interpretation of P values. 10 Hours</p> <p>UNIT – III: CO3 Medical Research: History, values in medical ethics, autonomy, beneficence, non-maleficence, double effect, conflicts between autonomy and beneficence/non-maleficence, euthanasia, informed consent, confidentiality, criticisms of orthodox medical ethics, importance of communication, control resolution, guidelines, ethics committees, cultural concerns, truth telling, online business practices, conflicts of interest, referral, vendor relationships, treatment of family members, sexual relationships, fatality. 10 Hours</p>	

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

UNIT – IV:

CO4

CPCSEA guidelines for laboratory animal facility: Goals, veterinary care, quarantine, surveillance, diagnosis, treatment and control of disease, personal hygiene, location of animal facilities to laboratories, anesthesia, euthanasia, physical facilities, environment, animal husbandry, record keeping, SOPs, personnel and training, transport of lab animals.

10 Hours

UNIT – V:

CO5

Declaration of Helsinki: History, introduction, basic principles for all medical research, and additional principles for medical research combined with medical care.

10 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1	Biostatistics and Research Methodology	G. Nageswara Rao	2018	Indian Books and Periodicals
2	Pharmaceutical Statistics And Research Methodology	Gowda	2019	Pharma med press
3	Statistical Methods for Research: A Step by Step Approach Using IBM SPSS	K. Kalyanaraman, Hareesh N. Ramanathan, P.N. Harikumar	2016	Atlantic

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1	Research methodology and Biostatistics	Suresh .K. Sharma	2019	Elsevier
2	Research Methodology: Methods and Techniques	C. R. Kothari	2004	New Age International (P) Limited

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	



SHRI SHANKARACHARYA TECHNICAL CAMPUS, BHILAI

Faculty of Pharmaceutical Sciences

(An Autonomous Institute affiliated to CSVTU, Bhilai)

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020-2021 Batch)

M. Pharm Final Year (3rd / 4th semester)

Scheme of Teaching and Examination Master of Pharmacy (M. Pharm)

(Common for All Specializations)

IV Semester

S. No.	Board of study	Subject Code	Subject	Periods per week			Scheme of Examination			Total Marks	Credit L+(T+P)/2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Pharmacy	PH208 491(36)	Major Dissertation (Seminar & viva)	-	-	36	400	-	200	600	18
Total				-	-	36	400	-	200	600	18

L- Lecture, T- Tutorial, P-

Practical, Duration of Theory

paper 3 hours

ESE – End Semester Examination, CT – Class Test, TA- Teacher Assessment

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	