

GOVERNMENT OF TELANGANA  
HIGHER EDUCATION (UE) DEPARTMENT

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Dated:06-07-2015

Letter No.2207/UE/2015-2,

From:  
The Principal Secretary to Government,  
Higher Education Department,  
Telangana State Secretariat,  
Hyderabad.

To  
The Vice-Chancellor,  
Osmania University, Hyderabad / Kakatiya University, Warangal/ Palamuru  
University, Mahabubnagar/ Mahatma Gandhi University, Nalgonda/ Satavahana  
University, Karimnagar/ Telangana University, Nizamabad/ Potti Sreeramulu  
University, Hyderabad/ Dr.B.R. Ambedkar Open University, Hyderabad, Jawaharlal  
Nehru Technological University, Hyderabad, Jawaharlal Nehru Architecture and Fine  
Arts University, Hyderabad and Rajiv Gandhi University of Knowledge Technologies,  
Hyderabad. (w.e)

Sir/Madam,

Sub:- Higher Education Department - Universities - Implementation of Choice  
Based Credit System (CBCS) and National Skills Qualification  
Framework(NSQF) in the Universities from Academic Year 2015-16- Reg.

- Ref: 1. From the Secretary, Ministry of Human Resource Development,  
Department of Higher Education, Government of India, D.O.Lr.No.  
SECY(HE)/ 2014/ 139980, dt.28.11.2014.
2. University Grants Commission Guidelines on adaptation of Choice  
Based Credit System (CBCS).
3. Ministry of Human Resource Development, Document for Credit  
Framework, skills and Education under the National Skills qualification  
Framework, dt.11.11.2014.
4. Govt. Memo.No. 3667/OP/A2/2014-01, Higher Education (OP)  
Department, dt.10.12.2014.
5. From the Additional Secretary, Ministry of Human Resource  
Development, Department of Higher Education, Government of India,  
D.O.No.F. 36-13/2014-TS-II(NV), dt.17.12.2014.
6. G.O.Rt.No.1 Higher Education (OP) Department dt.02.01.2015.
7. Preliminary report of the Committee dt. nil Constituted vide G.O.Rt.No. 1  
Higher Education (OP) Department dt.02.01.2015.
8. Report and recommendations of Committee(2015) for introduction of  
Credit Framework and Skill Development (CFSD) and Choice Based  
Credit System (CBCS) in Higher Education Institutions of Telangana  
State, dt. 30.01.2015.
9. From the Commissioner of Collegiate Education, Telangana State, Hyd.,  
Lr.No.01/Academic Cell/AC/2014, dt.08-04-2015.
10. Govt. Letter No.2207/UE/2015-1, Higher Education (UE) Department,  
dt.17.04.2015.
11. From the Secretary, Telangana State Council of Higher Education,  
Lr..dt. Nil received on 25-06-2015.



*Principal*  
Yashwanth Pharmacy College  
Botlikunta, Warangal - 506 004

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regarding Choice Based Credit System (CBCS) issued by the University Grants Commission has informed that both are path breaking initiatives which can transform the quality of Higher Education in our country. The first document provides a framework for Certification of Skills and for provision of credits for such Skill and Theory to acquire formal University and Board Certification. The second document provides for Semesterization of Curricula in the Universities, Choices of Courses for Students and Standardisation of the Examination and Credit System to allow for mobility.

2. The Ministry of Human Resource Development gives very high priority to adaption of the Credit System for Skills and Education and of the Choice Based Credit System by State Universities and other Institutions. The credit framework, using the NSQF and National Occupational standards, is an exercise in recognising Skills and Education as part of an Integrated Learning System. It is an effort to bridge the gap between Certificate and Diploma level and between Diploma and Degree levels by allowing for mobility from one to the other. It also provides an opportunity to the Graduates of Vocational Education to further pursue Post Graduate learning. The best of the Universities across the world follow the Choice Based Credit System which facilitates diversity of opportunities for the students and also encourages their employability. The Skills and Education Credit System is path breaking in permitting a formal Certification through the University System of Vocational Skills. The adoption of the Choice Based Credit System will permit students doing General Graduate Programmes to take credits in Semesters for Skill Based Programmes as well, if they so desire. This will greatly facilitate their employability. The success of Make in India, Digital India, Skill India all depend on our ability to improve outcomes for the Higher Education System.

3. Both the Systems need to be adopted soon. This will require lot of work on semesterization of Curriculum, Standardization of Examinations and Restructuring of Syllabi and in the form of modules, identification of Core Courses, Elective Courses and Foundation Courses.

4. In the reference fourth cited, the references 2<sup>nd</sup> and 3<sup>rd</sup> cited i.e University Grants Commission Guidelines on adaptation of Choice Based Credit System (CBCS) and Document for Credit Framework, Skills and Education under National Skills Qualification Framework was communicated to you.

5. It is to inform further that Government vide G.O.Rt.No. 1, Higher Education (OP) Department dt.02.01.2015, had constituted a Committee under the Chairmanship of Prof. A. Ravinderanath, Dean, Development and UGC affairs, Osmania University and Six (6) other Members to give pre-requisite, recommendations on the Credit Framework for Skills and Education under NSQF and Choice Based Credit System. The said Committee has submitted its Preliminary and Final Report (2015) and made certain recommendations, requesting the Government to initiate necessary steps for implementation of Choice Based Credit System (CBCS) and Credit Framework for Skill Development (CFSD) in Higher Education Institutions in the State as per the directions of Ministry of Human Resource Development and UGC. Copy of the Preliminary Report is enclosed herewith as Annexure - I. The Final Report will be uploaded by the Chairman of the Committee (which was formed as per reference 6<sup>th</sup> cited) in the website [www.osmania.ac.in](http://www.osmania.ac.in). All the Vice-Chancellors may download the Final Report from this website.



*(Handwritten signature)*  
Principal  
Vaagdevi Pharmacy College  
Bollikurta, Warangal

Education and Commissioner of Technical Education, Telangana State, Hyderabad on the subject matter based on these Reports of the Committee and finalise further action in the matter.

7. The Secretary, Telangana State Council of Higher Education in the reference 11<sup>th</sup> cited, has informed that, with reference to the Public Notice issued by the UGC dt. 10.04.2015 seeking views and feedback from stakeholders on CBCS Model Curriculum and letter dt. 17.04.2015 from the State Government, a Meeting of the Deans of Faculties of all the State Universities and representative from Commissioner Collegiate Education and Members of the State Level Committee on CBCS was conducted on 24.04.2015 at Telangana State Council of Higher Education. The Meeting was chaired by the Prof. T. Papi Reddy, Chairman, Telangana State Council of Higher Education (TSCHE) and Co-chaired by Prof. S. Mallesh, Vice-Chairman, TSCHE. The Chairman after briefing the objectives of the meeting, requested the members to actively participate in the deliberations and express their views and opinions on CBCS for its implementation.

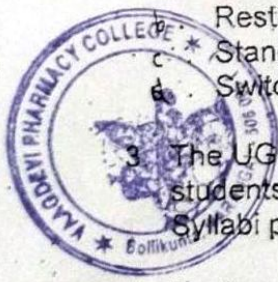
8. The Members after carefully examining the letters and guidelines issued by the UGC from time to time (12<sup>th</sup> November 2014, 8<sup>th</sup> January 2014 and 10<sup>th</sup> April 2015) expressed their opinions as follows:-

1. The UGC in its first letter dt. 12.11.2014 issued Guidelines for the adoption of CBCS uniformly throughout the country with a Draft Template classifying the courses as **Core**, **Elective** and **Foundation** with a minimum 50% of Core Component while providing a Scheme for the Grading System of Evaluation in a Semester Pattern.
2. The UGC in its subsequent letter dt. 08.01.2015 based on the consensus emerged from State Education Ministers meet convened by MHRD on 06.01.2015 requested to initiate action on CBCS by addressing the following pertinent issues in order to expedite the implementation process:-
  - a. Semesterization of Curricula.
  - b. Restructuring of Syllabi in the form of Modules
  - c. Standardisation of Examination and
  - d. Switching over from Numerical Marking System to Grade System

3. The UGC in its latest letter dt. 10.04.2015 directed the academic fraternity and students to send comments/feedback within 15 days for the Draft Model Syllabi proposed for Under Graduate Courses under CBCS.

4. Further, the Members on the directions of the State Government deliberated on the feasibility and implementation of CBCS and also discussed whether to commence it in a phased manner or to implement in toto in one go.

5. Finally, the Members opined that the TSCHE and State Government provide directions to the Universities over the feasibility and implementation of CBCS using the Broad Based Template provided in the Draft Report of the State Level Committee for redesigning, both Under Graduate and Post Graduate Programme of the respective Disciplines after deliberating in respective Academic Bodies of the Universities and also to decide on its commencement



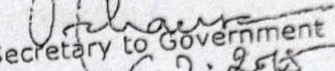
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Principal  
Vaagdevi Pharmacy College  
Bollikunta, Warangal - 506 005.

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10. Therefore, based on the above, you are requested to implement the CBCS (Choice Based Credit System) and NSQF (National Skills Qualification Framework) at the earliest in the academic year 2015-16 in your University..

11. You are also requested to inform the Government about the progress in this regard from time to time.

Yours faithfully,

  
Principal Secretary to Government  
6.7.2015

Copy to:

The Registrar,  
Osmania University, Hyderabad / Kakatiya University, Warangal/ Palamuru  
University, Mahabubnagar/ Mahatma Gandhi University, Nalgonda/ Satavahana  
University, Karimnagar/ Telangana University, Nizamabad/ Potti Sreeramulu  
University, Hyderabad/ Dr.B.R. Ambedkar Open University, Hyderabad, Jawaharlal  
Nehru Technological University, Hyderabad, Jawaharlal Nehru Architecture and Fine  
Arts University, Hyderabad and Rajiv Gandhi University of Knowledge Technologies,  
Hyderabad.

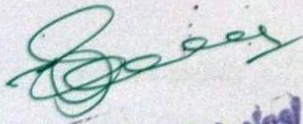
The Secretary, Ministry of Human Resource Development, Department of Higher  
Education, Government of India, 128 'C' wing, Sastri Bhavan, New Delhi -110115.

The Chairman, University Grants commission, Bahadursha Zafar Marg,  
New Delhi -110 002

The Secretary, Telangana State Council of Higher Education, Hyderabad.

The Commissioner of Collegiate Education, Telangana State, Hyderabad.

The Higher Education (OP & MC) Department.  
The P.S to Dy. CM& M(Edn)



Principal  
Vaagdevi Pharmacy College  
Bellikunta, Warangal - 506 005



Web Site: [www.jntu.ac.in](http://www.jntu.ac.in)  
Email: [dap@jntuh.ac.in](mailto:dap@jntuh.ac.in)



Phone: 040-2315 6115 (Telefax)  
040-23158661- 4 (Ext. 1445)

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
(Established by Andhra Pradesh Legislative Act No. 30 of 2008)  
Kukatpally, Hyderabad – 500 085 – Telangana- INDIA.

**Dr. Avula Damodaram**  
B.Tech.(C.S.E.), M.Tech.(C.S.), Ph.D.(C.S.)  
**Professor of CSE &**  
**Director, Academic and Planning**

Lr. No. A1/2293/2015

Date : 29.07.2015

To  
The Principals/Directors of all the Constituent Colleges/Units of JNTUH.  
The Principals/Directors of all the Affiliated Colleges of JNTUH.

Sir,

Sub: JNTUH, Hyderabad – Academic & Planning – Implementation of Choice Based Credit System (CBCS) and National Skills Qualification Framework (NSQF) in the Universities from the Academic year 2015-16.

Ref: Letter No. 2207/UE/2015-2 dated 06.07.2015 of the Principal Secretary to Government, Higher Education Department, Government of Telangana.

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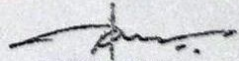
With reference to the letter cited, the Higher Education Department, Government of Telangana State requested the University to implement the Choice Based Credit System (CBCS) and National Skills Qualification Framework (NSQF) (UGC XII Plan Guidelines) at the earliest from the Academic year 2015-16.

I am by direction, communicated the same for your information and necessary action.

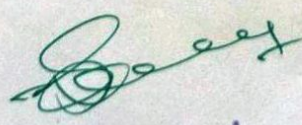
Yours faithfully

Encl: As above

Copy to P.A. to Vice-Chancellor, PA to Rector, PA to Registrar.  
Copy to the Director of Evaluation and Controller of Examinations.

  
DIRECTOR



  
Principal  
Vaagdevi Pharmacy College  
Bollikunta, Warangal - 506 005

**1.2.1.1 NUMBER OF  
PROGRAMMES IN WHICH  
CBCS / ELECTIVE  
COURSE SYSTEM  
IMPLEMENTED.**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**B. PHARMACY III YEAR COURSE STRUCTURE AND SYLLABUS**

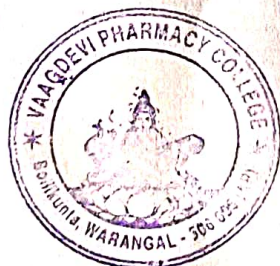
Effective from Academic Year 2017-18 Admitted Batch

**III Year I Semester**

S. No.	Course Code	Course Title	L	T	P	Credits
1	PS501	Medicinal Chemistry II	3	1	0	4
2	PS502	Industrial Pharmacy - I	3	1	0	4
3	PS503	Pharmacology II	3	1	0	4
4	PS504	Pharmacognosy and Phytochemistry - II	3	1	0	4
5	PS505 PS506 PS507 PS508	<b>Open Elective - I</b> I. Generic Product Development II. Green Chemistry III. Cell and Molecular Biology <b>IV. Cosmetic science</b>	3	1	0	4
6	PS509	Industrial Pharmacy lab	0	0	4	2
7	PS510	Pharmacology - II lab	0	0	4	2
8	PS511	Pharmacognosy and Phytochemistry - II lab	0	0	4	2
9	*MC500	Environmental sciences	1	0	0	0
<b>Total</b>			<b>16</b>	<b>05</b>	<b>12</b>	<b>26</b>

**III Year II Semester**

S. No.	Course Code	Course Title	L	T	P	Credits
1	PS601	Medicinal Chemistry - III	3	1	0	4
2	PS602	Pharmacology - III	3	1	0	4
3	PS603	Herbal Drug Technology	3	1	0	4
4	PS604	Biopharmaceutics and Pharmacokinetics	3	1	0	4
5	PS605 PS606 PS607 PS608	<b>Open Elective - II</b> I. Pharmaceutical Quality Assurance <b>II. Pharmaceutical Biotechnology</b> III. Bioinformatics IV. Screening Methods in Pharmacology	3	1	0	4
6	PS609	Medicinal chemistry - III lab	0	0	4	2
7	PS610	Pharmacology - III lab	0	0	4	2
8	PS611	Herbal Drug Technology lab	0	0	4	2
9	*MC600	Human Values and Professional Ethics	1	0	0	0
<b>Total</b>			<b>16</b>	<b>05</b>	<b>12</b>	<b>26</b>



*(Signature)*  
**Principal**  
**Vaagdevi Pharmacy College**  
 Bollikunta, Warangal-506005 (T.S)

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**B. PHARMACY IV YEAR COURSE STRUCTURE AND SYLLABUS**

Effective from Academic Year 2017-18 Admitted Batch

**IV Year I Semester**

S.No	Course Code	Course Title	L	T	P	Credits
1	PS701	Instrumental Methods of Analysis	3	1	0	4
2	PS702	Industrial Pharmacy-II	3	1	0	4
3	PS703	Pharmacy Practice	3	1	0	4
4	PS704	Novel Drug Delivery Systems	3	1	0	4
5		<b>Open Elective - III</b>	3	1	0	4
	PS705	i. Pharmaceutical Marketing				
	PS706	ii. Pharmaceutical Regulatory Science				
	PS707	iii. Pharmacovigilance				
	PS708	iv. Quality Control and Standardization of Herbals				
6	PS709	Instrumental Methods of Analysis Lab	0	0	4	2
7	PS710	Practice School	0	0	4	2
8	PS711	Industrial Training	0	0	2	1
		<b>Total</b>	<b>15</b>	<b>5</b>	<b>10</b>	<b>25</b>

**IV Year II Semester**

S.No	Course Code	Course Title	L	T	P	Credits
1	PS801	Biostatistics and Research Methodology	3	1	0	4
2	PS802	Social and Preventive Pharmacy	3	1	0	4
3	PS803	Pharmaceutical Jurisprudence	3	0	0	3
4		<b>Open Elective - IV</b>	3	1	0	4
	PS804	i. Computer Aided Drug Design				
	PS805	ii. Nano Technology				
	PS806	iii. Experimental Pharmacology				
	PS807	iv. Advanced Instrumentation Techniques				
5	PS808	Project Work	0	0	6	3
		<b>Total</b>	<b>12</b>	<b>3</b>	<b>6</b>	<b>18</b>



*(Signature)*  
**Principal**  
**Vaagdevi Pharmacy College**  
 Bollikunta, Warangal - 506005 (T.S.)



**VAAGDEVI PHARMACY COLLEGE (AUTONOMOUS)**  
**M.PHARMACY (PHARMACEUTICS)**  
**R23 COURSE STRUCTURE AND SYLLABUS**  
**Applicable from Academic Year 2023-24 Admitted Batch**

**I YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-I	Modern Pharmaceutics-I	3	1	0	4
Professional Core-II	Applied Biopharmaceutics and Pharmacokinetics	3	1	0	4
Professional Elective-I	1. Advanced Physical Pharmaceutics 2. Drug Regulatory affairs 3. Total Quality Management	3	1	0	4
Professional Elective-II	1. Cosmetics and Cosmeceuticals 2. Pharmaceutical Validation 3. Stability of Drugs and Dosage Forms	3	1	0	4
	Research methodology and IPR	2	0	0	2
Laboratory- I	Modern Pharmaceutics – I Lab	0	0	6	3
Laboratory- II	Applied Biopharmaceutics and Pharmacokinetics Lab	0	0	6	3
Audit - I	Audit Course- I	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>TOTAL</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**I YEAR II Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-III	Modern Pharmaceutics - II	3	1	0	4
Professional Core-IV	Advanced Drug Delivery Systems	3	1	0	4
Professional Elective-III	1. Industrial Pharmacy 2. Herbal Cosmetics 3. Pharmaceutical Management	3	1	0	4
Professional Elective-IV	1. Nano based Drug Delivery Systems 2. Nutraceuticals 3. Clinical Research and Pharmacovigilance	3	1	0	4
Laboratory- III	Modern Pharmaceutics – II Lab	0	0	6	3
Laboratory- IV	Advanced Drug Delivery System Lab	0	0	6	3
	Mini Project	2	0	0	2
Audit - II	Audit Course- II	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>TOTAL</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**II YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Elective-V	1. Biostatistics 2. Scale up and Technology Transfer 3. Production area, Design and Packaging Development	3	1	0	4
Open Elective	Open Elective	3	1	0	4
	Comprehensive Viva voce	0	0	8	4
	Dissertation Work Review – II	0	0	24	12
	<b>TOTAL</b>	<b>6</b>	<b>2</b>	<b>32</b>	<b>24</b>



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M.PHARMACY (PHARMACEUTICS / PHARMACEUTICAL TECHNOLOGY)**  
**R22 COURSE STRUCTURE AND SYLLABUS**  
**Effective from Academic Year 2022-23 Admitted Batch**

**I YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-I	Modern Pharmaceutics-I	3	1	0	4
Professional Core-II	Applied Biopharmaceutics and Pharmacokinetics	3	1	0	4
Professional Elective-I	1. Advanced Physical Pharmaceutics 2. Drug Regulatory affairs 3. Total Quality Management	3	1	0	4
Professional Elective-II	1. Cosmetics and Cosmeceuticals 2. Pharmaceutical Validation 3. Stability of Drugs and Dosage Forms	3	1	0	4
	Research methodology and IPR	2	0	0	2
Laboratory- I	Modern Pharmaceutics – I Lab	0	0	6	3
Laboratory- II	Applied Biopharmaceutics and Pharmacokinetics Lab	0	0	6	3
Audit - I	Audit Course- I	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>TOTAL</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**I YEAR II Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-III	Modern Pharmaceutics - II	3	1	0	4
Professional Core-IV	Advanced Drug Delivery Systems	3	1	0	4
Professional Elective-III	1. Industrial Pharmacy 2. Herbal Cosmetics 3. Pharmaceutical Management	3	1	0	4
Professional Elective-IV	1. Nano based Drug Delivery Systems 2. Nutraceuticals 3. Clinical Research and Pharmacovigilance	3	1	0	4
Laboratory- III	Modern Pharmaceutics – II Lab	0	0	6	3
Laboratory- IV	Advanced Drug Delivery System Lab	0	0	6	3
	Mini Project	2	0	0	2
Audit - II	Audit Course- II	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>TOTAL</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**II YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Elective-V	1. Biostatistics 2. Scale up and Technology Transfer 3. Production area, Design and Packaging Development	3	1	0	4
Open Elective	Open Elective	3	1	0	4
	Comprehensive Viva voce	0	0	8	4
	Dissertation Work Review – II	0	0	24	12
	<b>TOTAL</b>	<b>6</b>	<b>2</b>	<b>32</b>	<b>24</b>



*[Signature]*  
**Principal**  
**Vaagdevi Pharmacy College**  
**Bollikunta, Warangal-506005 (T.S)**

**VAAGDEVI PHARMACY COLLEGE (AUTONOMOUS)**  
**M.PHARMACY (PHARMACEUTICAL ANALYSIS)**  
**R23 COURSE STRUCTURE AND SYLLABUS**  
 Applicable from Academic Year 2023-24 Admitted Batch

**I YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-I	Modern Pharmaceutical Analytical Techniques	3	1	0	4
Professional Core-II	Pharmaceutical Food Analysis	3	1	0	4
Professional Elective-I	1. Advanced Pharmaceutical Analysis 2. Drug Regulatory Affairs 3. Phytochemistry	3	1	0	4
Professional Elective-II	1. Pharmaceutical Validation 2. Cosmetics and Cosmeceuticals 3. Stability of Drugs and Dosage forms	3	1	0	4
	Research Methodology & IPR	2	0	0	2
Laboratory-I	Modern Pharmaceutical Analytical Techniques lab	0	0	6	3
Laboratory-II	Pharmaceutical food Analysis Lab	0	0	6	3
Audit - II	Audit course- I	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>TOTAL</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**I YEAR II Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-III	Advanced Instrumental Analysis - I	3	1	0	4
Professional Core-IV	Pharmaceutical Quality Control & Quality Assurance	3	1	0	4
Professional Elective-III	1. Modern Bio-analytical Techniques 2. Herbal Cosmetics 3. Pharmacoepidemiology & Pharmacoeconomics	3	1	0	4
Professional Elective-IV	1. Advanced Instrumental Analysis - II 2. Nutraceuticals 3. Clinical Research and Pharmacovigilance	3	1	0	4
Laboratory- III	Advanced Instrumental Analysis I Lab	0	0	6	3
Laboratory- IV	Pharmaceutical Quality Control & Quality Assurance Lab	0	0	6	3
	Mini project	2	0	0	2
Audit - II	Audit Course - II	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>Total</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**II YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Elective-V	1. Biostatistics 2. Scale up and Technology Transfer 3. Production Area Design and Packaging Development	3	1	0	4
Open Elective	Open Elective	3	1	0	4
Dissertation	Comprehensive Viva Voce	0	0	8	4
	Dissertation Work Review - II	0	0	24	12
	<b>Total</b>	<b>6</b>	<b>2</b>	<b>32</b>	<b>24</b>



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M.PHARMACY (PHARMACEUTICAL ANALYSIS)**  
**R22 COURSE STRUCTURE AND SYLLABUS**  
**Effective from Academic Year 2022-23 Admitted Batch**

**I YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-I	Modern Pharmaceutical Analytical Techniques	3	1	0	4
Professional Core-II	Pharmaceutical Food Analysis	3	1	0	4
Professional Elective-I	1. Advanced Pharmaceutical Analysis	3	1	0	4
	2. Drug Regulatory Affairs				
Professional Elective-II	3. Phytochemistry				
	1. Pharmaceutical Validation	3	1	0	4
	2. Cosmetics and Cosmeceuticals				
	3. Stability of Drugs and Dosage forms				
	Research Methodology & IPR	2	0	0	2
Laboratory-I	Modern Pharmaceutical Analytical Techniques lab	0	0	6	3
Laboratory-II	Pharmaceutical food Analysis Lab	0	0	6	3
Audit - II	Audit course- I	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>TOTAL</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**I YEAR II Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-III	Advanced Instrumental Analysis - I	3	1	0	4
Professional Core-IV	Pharmaceutical Quality Control & Quality Assurance	3	1	0	4
Professional Elective-III	1. Modern Bio-analytical Techniques	3	1	0	4
	2. Herbal Cosmetics				
Professional Elective-IV	3. Pharmacoepidemiology & Pharmacoeconomics				
	1. Advanced Instrumental Analysis - II	3	1	0	4
Laboratory- III	2. Nutraceuticals				
	3. Clinical Research and Pharmacovigilance				
Laboratory- IV	Advanced Instrumental Analysis I Lab	0	0	6	3
	Pharmaceutical Quality Control & Quality Assurance Lab	0	0	6	3
	Mini project	2	0	0	2
Audit - II	Audit Course - II	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>Total</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**II YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Elective-V	1. Biostatistics	3	1	0	4
	2. Scale up and Technology Transfer				
Open Elective	3. Production Area Design and Packaging Development				
	Open Elective	3	1	0	4
Dissertation	Comprehensive Viva Voce	0	0	8	4
	Dissertation Work Review - II	0	0	24	12
	<b>Total</b>	<b>6</b>	<b>2</b>	<b>32</b>	<b>24</b>



**VAAGDEVI PHARMACY COLLEGE (AUTONOMOUS)**  
**M.PHARMACY (PHARMACEUTICAL REGULATORY AFFAIRS)**  
**R23 COURSE STRUCTURE AND SYLLABUS**  
**Effective from Academic Year 2023-24 Admitted Batch**

**I YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-I	Good Regulatory Practices	3	1	0	4
Professional Core-II	Drug Regulatory Affairs	3	1	0	4
Professional Elective-I	1. Intellectual Property Rights 2. Total Quality management 3. Pharmaceutical Validation	3	1	0	4
Professional Elective-II	1. Stability of Drugs and Dosage Forms 2. Pharmaceutical Formulation Technology 3. Documentation and Regulatory Writing	3	1	0	4
	Research methodology and IPR	2	0	0	2
Laboratory-I	Regulatory Practice and Documentation Lab	0	0	6	3
Laboratory-II	Drug Regulation and Registration Lab	0	0	6	3
Audit-I	Audit Course-I	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>Total</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**I YEAR II Semester**

Course Code	Course Title	L	T	P	Credits
Professional Core-III	Regulatory aspects of herbals and biologicals	3	1	0	4
Professional Core-IV	Regulatory aspects of medical devices	3	1	0	4
Professional Elective-III	1. Regulatory aspects of Foods and Nutraceuticals 2. Pharmaceutical Quality Control and Quality Assurance 3. Nano Based Drug Delivery Systems	3	1	0	4
Professional Elective-IV	1. Clinical Research and Pharmacovigilance 2. Nutraceuticals 3. Advanced Drug Delivery Systems	3	1	0	4
Laboratory-III	Regulatory aspects of herbals and biological lab	0	0	6	3
Laboratory-IV	Regulatory aspects of medical devices lab	0	0	6	3
	Mini project	2	0	0	2
Audit-II	Audit Course-II	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>Total</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

**II YEAR I Semester**

Course Code	Course Title	L	T	P	Credits
Professional Elective-V	1. Biostatistics 2. Scaleup and Technology Transfer 3. Production area, Design and Packaging Development	3	1	0	4
Open Elective	Open Elective	3	1	0	4
	Comprehensive Viva Voce	0	0	8	4
	Dissertation Work Review- II	0	0	24	12
	<b>Total</b>	<b>6</b>	<b>2</b>	<b>32</b>	<b>24</b>



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M.PHARMACY (PHARMACEUTICAL REGULATORY AFFAIRS)**  
**R22 COURSE STRUCTURE AND SYLLABUS**  
**Effective from Academic Year 2022-23 Admitted Batch**

I YEAR I Semester					
Course Code	Course Title	L	T	P	Credits
Professional Core-I	Good Regulatory Practices	3	1	0	4
Professional Core-II	Drug Regulatory Affairs	3	1	0	4
Professional Elective-I	1. Intellectual Property Rights 2. Total Quality management 3. Pharmaceutical Validation	3	1	0	4
Professional Elective-II	1. Stability of Drugs and Dosage Forms 2. Pharmaceutical Formulation Technology 3. Documentation and Regulatory Writing	2	0	0	2
	Research methodology and IPR	0	0	6	3
Laboratory- I	Regulatory Practice and Documentation Lab	0	0	6	3
Laboratory- II	Drug Regulation and Registration Lab	2	0	0	0
Audit - I	Audit Course - I	0	0	4	2
	Seminar & Assignment	16	4	16	26
	<b>Total</b>				

I YEAR II Semester					
Course Code	Course Title	L	T	P	Credits
Professional Core-III	Regulatory aspects of herbals and biologicals	3	1	0	4
Professional Core-IV	Regulatory aspects of medical devices	3	1	0	4
Professional Elective-III	1. Regulatory aspects of Foods and Nutraceuticals 2. Pharmaceutical Quality Control and Quality Assurance 3. Nano Based Drug Delivery Systems	3	1	0	4
Professional Elective-IV	1. Clinical Research and Pharmacovigilance 2. Nutraceuticals 3. Advanced Drug Delivery Systems	3	1	0	4
Laboratory- III	Regulatory aspects of herbals and biologicals lab	0	0	6	3
Laboratory- IV	Regulatory aspects of medical devices lab	0	0	6	3
	Mini project	2	0	0	2
Audit - II	Audit Course - II	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>Total</b>	16	4	16	26

II YEAR I Semester					
Course Code	Course Title	L	T	P	Credits
Professional Elective-V	1. Biostatistics 2. Scale up and Technology Transfer 3. Production area, Design and Packaging Development	3	1	0	4
Open Elective	Open Elective	3	1	0	4
	Comprehensive Viva Voce	0	0	8	4
	Dissertation Work Review - II	0	0	24	12
	<b>Total</b>	6	2	32	24



**VAAGDEVI PHARMACY COLLEGE (AUTONOMOUS)**  
**M. PHARMACY (PHARMACOLOGY)**  
**R23 COURSE STRUCTURE AND SYLLABUS**  
 Applicable from Academic Year 2023 – 24 Admitted Batch

I YEAR I Semester		L	T	P	Credits
Course Code	Course Title				
Professional Core-I	Advanced Pharmacology-I	3	1	0	4
Professional Core-II	Clinical Pharmacology and Pharmacotherapeutics	3	1	0	4
Professional Elective-I	1. Pharmacokinetics and Drug Metabolism 2. Clinical Research and Pharmacovigilance 3. Principles of Drug Discovery	3	1	0	4
Professional Elective-II	1. Animal Cell Cultures and Applications 2. Molecular Biology 3. Principles of Toxicology	3	1	0	4
	Research Methodology and IPR	2	0	0	2
Laboratory-I	Advanced Pharmacology –I Lab	0	0	6	3
Laboratory-II	Clinical Pharmacology and Pharmacotherapeutics Lab	0	0	6	3
Audit-I	Audit Course-I	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>TOTAL</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

I YEAR II Semester		L	T	P	Credits
Course Code	Course Title				
Professional Core-III	Advanced Pharmacology - II	3	1	0	4
Professional Core-IV	Pharmacological Screening Methods and Toxicology	3	1	0	4
Professional Elective-III	1. Quality Use of Medicines 2. Pharmacoepidemiology and Pharmacoeconomics 3. Advanced Drug Delivery Systems	3	1	0	4
Professional Elective-IV	1. Pharmaceutical Management 2. Nutraceuticals 3. Pharmacokinetic and Therapeutic Drug Monitoring	3	1	0	4
Laboratory-III	Advanced Pharmacology-II Lab	0	0	6	3
Laboratory-IV	Pharmacological Screening Methods and Toxicology lab	0	0	6	3
	Mini project	2	0	0	2
Audit-II	Audit Course- II	2	0	0	0
	Seminar & Assignment	0	0	4	2
	<b>TOTAL</b>	<b>16</b>	<b>4</b>	<b>16</b>	<b>26</b>

II YEAR I Semester		L	T	P	Credits
Course Code	Course Title				
Professional Elective-V	1. Biostatistics 2. Hospital and Community Pharmacy 3. Medicinal Plant Biotechnology	3	1	0	4
Open Elective	Open Elective	3	1	0	4
	Comprehensive Viva Voce	0	0	8	4
	Dissertation Work Review-II	0	0	24	12
	<b>TOTAL</b>	<b>6</b>	<b>2</b>	<b>32</b>	<b>24</b>

