CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
Courses of Study and Scheme of Examination of B.E. First Year (2005-06)
Common to all branches of Engineering except Bio-Tech. & Bio-Medical Engg.

FIRST SEMESTER

S.No	Board of Study	Subject Code	Subject	Periods Per Week			Scheme of Examination Theory			Total Marks	Credit [L+[T+P]] 2
				L	T	P	ESE	CT	TA		
1	Humanities	300111(46)	Language (Professional communication in English)	2	1	-	80	20	20	120	3
2	Basic Sciences	300112(11)	Applied Chemistry	3	1	-	80	20	20	120	4
3	Basic Sciences	300113(15)	Applied Physics-I	3	1	-	80	20	20	120	4
4	Basic Sciences	300114(14)	Applied Maths-I	4	1	-	80	20	20	120	5
5	Elect. Engg.	300115(24)	Basic Electrical Engg.	4	1	-	80	20	20	120	5
6	Mech. Engg.	300116(37)	Engg. Mechanics	3	1	-	80	20	20	120	4
7	Basic Sciences	300121(11)	Applied Chemistry LAB	-	-	2	40	-	20	60	1
8	Elect. Engg.	300122(24)	Basic Electrical Engineering LAB	-	-	2	40	-	20	60	1
9	Mech. Engg.	300123(37)	Engg. Mechanics LAB	-	-	2	40	-	20	60	1
10	Mech. Engg.	300124(37)	Workshop	-	-	6	40	-	20	60	3
11	Humanities	300125(46)	Communication Skills	-	-	2	-	-	40	40	1
12			Library	-	-	1	-	-	-	-	-
TOTAL				**19**	**6**	**15**	**640**	**120**	**240**	**1000**	**32**

L-Lecture, T-Tutorial, P-Practical, ESE – End Semester Exam, CT- Class Test, TA- Teacher's Assessment

Note: (i) The teaching in the 1st and 2nd semester will be divided in two groups consisting of various branches as shown below: P1-GROUP: Electronics & Communication, Information Technology, Electronics & Instrumentation, Electrical, Chemical, Electrical & Electronics; Q1-GROUP: Computer Science, Mechanical, Civil, Mining and Applied Electronics & Instrumentation, Metallurgy.

(ii) Applied Maths - I will be taught to both the groups.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
Courses of Study and Scheme of Examination of B.E. First Year (2005-06)
Common to all branches of Engineering except Bio-Tech. & Bio-Medical Engg.

SECOND SEMESTER

S.No	Board of Study	Subject Code	Subject	Periods Per Week			Scheme of Examination Theory			Total Marks	Credit [L+[T+P]] 2
				L	T	P	ESE	CT	TA		
1	Mech. Engg.	300211(37)	Engg. Graphics	2	-	-	80	20	20	120	2
2	Basic Sciences	300212(11)	Environment & Ecology	3	1	-	80	20	20	120	4
3	Basic Sciences	300213(15)	Applied Physics-II	3	1	-	80	20	20	120	4
4	Basic Sciences	300214(14)	Applied Maths – II	4	1	-	80	20	20	120	5
5	Mech. Engg.	300215(37)	Basic Mechanical Engg.	4	1	-	80	20	20	120	5
6	Civil Engg.	300216(20)	Basic Civil Engg.	3	1	-	80	20	20	120	4
7	Mech. Engg.	300224(37)	Engg. Graphics LAB	-	-	4	40	-	20	60	2
8	Basic Sciences	300222(15)	Applied Physics-II LAB	-	-	2	40	-	20	60	1
9	Civil Engg.	300223(20)	Basic Civil Engg. LAB	-	-	2	40	-	20	60	1
10	Computer Sc. & Engg.	300225(22)	Introduction to Computing LAB	-	1	4	40	-	20	60	3
11	Humanities	300226(46)	Group Discussion	-	-	2	-	-	40	40	1
12			Library	-	-	1	-	-	-	-	-
TOTAL				**19**	**6**	**15**	**640**	**120**	**240**	**1000**	**32**

L-Lecture, T-Tutorial, P-Practical, ESE – End Semester Exam, CT- Class Test, TA- Teacher's Assessment

Note: (i) The teaching in the 1st and 2nd semester will be divided in two groups consisting of various branches as shown below: P1-GROUP: Electronics & Communication, Information Technology, Electronics & Instrumentation, Electrical, Chemical, Electrical & Electronics; Q1-GROUP: Computer Science, Mechanical, Civil, Mining and Applied Electronics & Instrumentation, Metallurgy.

(ii) Applied Maths - I will be taught to both the groups.

Chhattisgarh Swami Vivekanand Technical University, Bhilai
SCHEME OF TEACHING & EXAMINATION
BE (Biotechnology) III Semester

Sl. No.	Board of Study	Subject Code	Subject	Period per week			Scheme of Exam			Total Marks	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1	Biotechnology	318351(18)	Cellular and Molecular Biology	4	0	-	80	20	20	120	4
2	Biotechnology	318352(18)	Microbial Technology	4	0	-	80	20	20	120	4
3	Biotechnology	318353(18)	Molecular Dynamics and Bioenergetics	3	1	-	80	20	20	120	4
4	Applied Chemistry	318354(11)	Phytochemistry	3	1	-	80	20	20	120	4
5	Chemical Engineering	318355(19)	Stoichimetric Calculations	3	1	-	80	20	20	120	4
6	Chemical Engineering	318356(19)	Instrumentation Techniques	4	1	-	80	20	20	120	5
7	Biotechnology	318361(18)	Cellular and Molecular Biology Lab	-	-	3	40	-	20	60	2
8	Biotechnology	318362(18)	Microbial Technology Lab	-	-	3	40	-	20	60	2
9	Applied Chemistry	318363(11)	Phytochemistry Lab	-	-	3	40	-	20	60	2
10	Chemical Engineering	318364(19)	Instrumentation Techniques Lab	-	-	3	40	-	20	60	2
11	Humanities	318365(46)	Value Education	-	-	2	-	-	40	40	1
12			Library	-	-	1					
			Total	**21**	**4**	**15**	**640**	**120**	**240**	**1000**	**34**

L: Lecture, T: Tutorial, P: Practical, ESE: End Semester Exam, CT: Class Test, TA: Teachers Assessment
Note: Duration of all theory papers will be of Three Hours.

Chhattisgarh Swami Vivekanand Technical University, Bhilai
SCHEME OF TEACHING & EXAMINATION
BE (Biotechnology) IV Semester

Sl. No.	Board of Study	Subject Code	Subject	Period per week			Scheme of Exam			Total Marks	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1	Chemical Engineering	318451(19)	Transport Process	4	1	-	80	20	20	120	5
2	Chemical Engineering	318452(19)	Thermodynamics and Biochemical Reaction Engineering	4	0	-	80	20	20	120	4
3	Biotechnology	318453(18)	Physiology	4	0	-	80	20	20	120	4
4	Biotechnology	318454(18)	Recombinant DNA technology	4	0	-	80	20	20	120	4
5	Biotechnology	318455(18)	Biochemistry	3	1	-	80	20	20	120	4
6	Biotechnology	318456(18)	Medical Biotechnology	3	1	-	80	20	20	120	4
7	Chemical Engineering	318461(19)	Transport Process Lab	-	-	3	40	-	20	60	2
8	Chemical Engineering	318462(19)	Thermodynamics and Biochemical Reaction Engineering Lab	-	-	3	40	-	20	60	2
9	Biotechnology	318463(18)	Recombinant DNA Technology Lab	-	-	3	40	-	20	60	2
10	Biotechnology	318464(18)	Biochemistry Lab	-	-	3	40	-	20	60	2
11	Humanities .	318465(46)	Health, hygiene and yoga	-	-	2	-	-	40	40	1
12			Library	-	-	1					
			TOTAL	**22**	**3**	**15**	**640**	**120**	**240**	**1000**	**34**

L: Lecture, T: Tutorial, P: Practical, ESE: End Semester Exam, CT: Class Test, TA: Teachers Assessment
Note (1): Duration of all theory papers will be of Three Hours.
Note (2): Industrial Training of six weeks is mandatory for B.E. student. It is to be completed in two parts. The first part will be in summer after IV sem. after which students have to submit a training report which will be evaluated by the college teachers during B.E. V SEM.

Chhattisgarh Swami Vivekanand Technical University Bhilai (C.G.)

SCHEMEOFTEACHING&EXAMINATION

B.E. (V Semester) BIOTECHNOLOGY

S. No.	Board of Study	Subject Code	Subject	Period per week			Scheme of Exam			Total Marks	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1	Biotechnology	318551(18)	Enzyme Technology	3	1	-	80	20	20	120	4
2	Biotechnology	318552(18)	Biosafety &Bioethics	3	1	-	80	20	20	120	4
3	Chemical Engineering	318553(19)	Process Economics and Management	4	-	-	80	20	20	120	4
4	Chemical Engineering	318554(19)	Heat & Mass Transfer Operations	4	1	-	80	20	20	120	5
5	Biotechnology	318555(18)	Tissue Culture	4	-	-	80	20	20	120	4
6	Biotechnology	318556 (18)	Computational Biology	3	1	-	80	20	20	120	5
7	Biotechnology	318561(18)	Enzyme Technology Lab	-	-	3	40	-	20	60	2
8	Biotechnology	318562(18)	Tissue Culture Lab	-	-	3	40	-	20	60	2
9	Biotechnology	318563(18)	Heat and Mass Transfer Lab	-	-	3	40		20	60	2
10	Biotechnology	318564 (18)	Computational Biology Lab	-	-	3	40	-	20	60	2
11	Humanities	300565(46)	Personality Development	-	-	2	-	-	40	40	1
12	Biotechnology	318566 (18)	Practical training Evaluation/ Library	-	-	1	-	-	20	20	1
			Total	**21**	**4**	**15**	**640**	**120**	**240**	**1000**	**36**

L: Lecture **T:** Tutorial **P:** Practical

ESE: End Semester Examination **CT:** Class Test **TA:** Teacher's Assessment

* Industrial Training of ten weeks is mandatory for B.E. student. It is to be completed in two parts. The first part will be in summer after IV sem. after which students have to submit a training report which will be evaluated by the college teachers during B.E. V sem.

Name of the Programme: Bachelor of Engineering   ::::   Duration of the Programme: Four Years

Chhattisgarh Swami Vivekanand Technical University
Bhilai (C.G.)
SCHEME OF TEACHING & EXAMINATION

B.E. (VI Semester) BIOTECHNOLOGY

S. No.	Board of Study	Subject Code	Subject	Period per week			Scheme of Exam			Total Marks	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1	Biotechnology	318651 (18)	Bioprocess Technology	3	1	-	80	20	20	120	4
2	Biotechnology	318652 (18)	Basic Immunology	3	1	-	80	20	20	120	4
3	Biotechnology	318653 (18)	Environmental Biotechnology	3	1	-	80	20	20	120	4
4	Biotechnology	318654 (18)	Bioinformatics	3	1	-	80	20	20	120	4
5	Biotechnology	318655 (18)	Applied forensics in Biotechnology	3	1	-	80	20	20	120	4
6	*Refer Table I*		Professional Elective -I	4		-	80	20	20	120	4
7	Biotechnology	318661 (18)	Bioprocess Technology Lab	-	-	3	40	-	20	60	2
8	Biotechnology	318662 (18)	Basic Immunology Lab	-	-	3	40	-	20	60	2
9	Biotechnology	318663 (18)	Environmental Biotechnology Lab	-	-	3	40	-	20	60	2
10	Biotechnology	318664 (18)	Bioinformatics Lab	-	-	3	40	-	20	60	2
11	Management	300665 (76)	Managerial Skills	-	-	2	-	-	40	40	1
12	Biotechnology	---------------	Library	-	-	1	-	-	-	-	-
			Total	19	5	15	640	120	240	1000	33

L: Lecture   **T:** Tutorial   **P:** Practical
ESE: End Semester Examination   **CT:** Class Test   **TA:** Teachers' Assessment

<u>**Note:**</u> Industrial Training of eight weeks is mandatory for B.E. students. It is to be completed in two equal parts. The first part must have been completed in summer after IV semester. The second part to be completed during summer after VI semester after which students have to submit a training report which will be evaluated by college teachers during B.E. VII semester.

Table I: Professional Elective – I

S. No	Board of Studies	Subject Code	Subject
1	Biotechnology	318671 (18)	Biofertilizer and Biopesticide
2	Biotechnology	318672 (18)	Biomechanics
3	Biotechnology	318673 (18)	Marine Biotechnology
4	Biotechnology	318674 (18)	Bioprocess Plant Design
5	Biotechnology	318675 (18)	Catalyst Engineering
6	Biotechnology	318676 (18)	Fertilizer Technology

Name of the Programme: Bachelor of Engineering   ::::   Duration of the Programme: Four Years

Chhattisgarh Swami Vivekanand Technical University, Bhilai

SCHEME OF TEACHING & EXAMINATION VII Sem. BIOTECHNOLOGY

S.No.	Board of Study	Subject Code	Subject	Period per week			Scheme of Exam			Total Marks	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1	Chemical Engineering	318731(19)	Unit Operation	4	1	-	80	20	20	120	5
2	Biotechnology	318732(18)	Immunotechnology	4	1	-	80	20	20	120	5
3	Biotechnology	318733(18)	Stem Cell in Health Care	4	-	-	80	20	20	120	4
4	Biotechnology	318734(18)	Pharmaceutical Biotechnology	4	1	-	80	20	20	120	5
5	Refer Table II		Professional Elective-II	4	-	-	80	20	20	120	4
6	Chemical Engineering	318761(19)	Unit Operation Lab	-	-	3	40	-	20	60	2
7	Biotechnology	318762(18)	Immunotechnology Lab	-	-	3	40	-	20	60	2
8	Biotechnology	318763(18)	Pharmaceutical Biotechnology Lab	-	-	3	40	-	20	60	2
9	Biotechnology	318764(18)	Minor Project	-	-	4	100	-	40	140	2
10	Management	318765(76)	Innovative and Entrepreneurial Skills	-	-	2	-	-	40	40	1
11	Humanities	318766(46)	Practical Training ** Evaluation / Library	-	-	2	-	-	40	40	1
			Total	20	3	17	620	100	280	1000	33

L: Lecture, T: Tutorial, P: Practical, ESE: End Semester Exam, CT: Class Test, TA: Teachers Assessment
Note: Duration of all theory papers will be of Three Hours.
To be completed after VI semester and before the commencement of VII semester.

Professional Elective Table II

S.No	Board of Studies	Subject Code	Subject
1	Biotechnology	318741(18)	Oncology
2	Biotechnology	318742(18)	Drug Design and Drug Delivery
3	Biotechnology	318743(18)	Biofuel technology

Chhattisgarh Swami Vivekanand Technical University, Bhilai

SCHEME OF TEACHING & EXAMINATION

B.E. (VIII Semester) BIOTECHNOLOGY

S.No.	Board of Study	Subject Code	Subject	Period per week			Scheme of Exam			Total Marks	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1	Biotechnology	318831(18)	Industrial Biotechnology	3	1	-	80	20	20	120	4
2	Biotechnology	318832(18)	Food Processing Technology	4	1	-	80	20	20	120	5
3	Biotechnology	318833(18)	Agriculture Technology	4	1	-	80	20	20	120	5
4	Refer Table III		Professional Elective III	4	-	-	80	20	20	120	4
5	Refer Table IV		Open Elective	4			80	20	20	120	4
6	Biotechnology	318861(18)	Industrial Biotechnology Lab	-	-	3	40	-	20	60	2
7	Biotechnology	318862(18)	Food Processing Technology Lab	-	-	3	40	-	20	60	2
8	Biotechnology	318863(18)	Agriculture Technology Lab	-	-	3	40	-	20	60	2
9	Biotechnology	318864(18)	Major Project	-	-	6	100	-	80	180	3
10	Biotechnology	318865(18)	Report writing and Seminar	-	-	2	-	-	40	40	1
11			Library		-	1					
			Total	19	3	18	620	100	280	1000	32

SCHEME OF TEACHING & EXAMINATION VIII Sem BIOTECHNOLOGY

L: Lecture, T: Tutorial, P: Practical, ESE: End Semester Exam, CT: Class Test, TA: Teachers Assessment

Note: Duration of all theory papers will be of Three Hours.

Professional Elective Table III

S.No	Board of Studies	Subject Code	Subject
1	Biotechnology	318841(18)	Bioentreprenuership

2	Biotechnology	318842(18)	Clinical Research and Trial Management
3	Biotechnology	318843(18)	Cellular and Molecular Diagnostics

Table IV Open Elective

Open Elective –IV			
S.No.	Board of Studies	Code	Name of Subject
1	Management	300851(76)	Enterprise Resource Planning **(Except CSE & IT Branch)**
2	Information Technology	300852(33)	E-Commerce & strategic IT **(Except CSE & IT Branch)**
3	Management	300853(76)	Technology Management
4	Information Technology	300854(33)	Decision Support & Executive Information system
5	Computer Science & Engg.	300855(22)	Software Technology
6	Management	300856(76)	Knowledge Entrepreneurship
7	Management	300857(76)	Finance Management
8	Management	300858(76)	Project Planning, Management & Evaluation
9	Mechanical Engg.	300859(37)	Safety Engineering
10	Computer Science & Engg.	300801(22)	Bio Informatics
11	Mechanical Engg.	300802(37)	Energy Conservation & Management
12	Nanotechnology	300803(47)	Nanotechnology
13	Management	300804(76)	Intellectual Property Rights
14	Mechanical Engg.	300805(37)	Value Engineering
15	Civil Engg.	300806(20)	Disaster Management
16	Civil Engg.	300807(20)	Construction Management
17	Civil Engg.	300808(20)	Ecology and Sustainable Development
18	Chem. Engg.	300809(19)	Non Conventional Energy Sources
19	Electrical Engg.	300810(24)	Energy Auditing & Management **(Except Electrical Engg. Branch)**
20	Mechanical Engg.	300811(37)	Managing Innovation & Entrepreneurship
21	Information Technology	300812(33)	Biometrics
22	Information Technolgy	300813(33)	Information Theory & Coding
23	Computer Science & Engg.	300814(22)	Supply Chain Management
24	Computer Science & Engg.	300815(22)	Internet & Web Technology
25	Electrical Engg.	300816(24)	Electrical Estimation and Costing
26	Electrical& Electronics Engg.	300817(25)	Non Conventional Energy Sources
27	Computer Science & Engg.	300818(22)	Big Data and Hadoop

Note (1) 1/4th of total strength of students is required to offer an elective in thecollege in a particular academic session.

(2) - Choice of elective course once made for an examination cannot be changed

Table - IV

	Open Elective –IV		
S.No.	Board of Studies	Code	Name of Subject
1	Management	300851(76)	Enterprise Resource Planning **(Except CSE & IT Branch)**
2	Information Technology	300852(33)	E-Commerce & strategic IT **(Except CSE & IT Branch)**
3	Management	300853(76)	Technology Management
4	Information Technology	300854(33)	Decision Support & Executive Information system
5	Computer Science & Engg.	300855(22)	Software Technology
6	Management	300856(76)	Knowledge Entrepreneurship
7	Management	300857(76)	Finance Management
8	Management	300858(76)	Project Planning, Management & Evaluation
9	Mechanical Engg.	300859(37)	Safety Engineering
10	Computer Science & Engg.	300801(22)	Bio Informatics
11	Mechanical Engg.	300802(37)	Energy Conservation & Management
12	Nanotechnology	300803(47)	Nanotechnology
13	Management	300804(76)	Intellectual Property Rights
14	Mechanical Engg.	300805(37)	Value Engineering
15	Civil Engg.	300806(20)	Disaster Management
16	Civil Engg.	300807(20)	Construction Management
17	Civil Engg.	300808(20)	Ecology and Sustainable Development
18	Chem. Engg.	300809(19)	Non Conventional Energy Sources
19	Electrical Engg.	300810(24)	Energy Auditing & Management **(Except Electrical Engg. Branch)**
20	Mechanical Engg.	300811(37)	Managing Innovation & Entrepreneurship
21	Information Technology	300812(33)	Biometrics
22	Information Technolgy	300813(33)	Information Theory & Coding
23	Computer Science & Engg.	300814(22)	Supply Chain Management
24	Computer Science & Engg.	300815(22)	Internet & Web Technology
25	Electrical Engg.	300816(24)	Electrical Estimation and Costing
26	Electrical& Electronics Engg.	300817(25)	Non Conventional Energy Sources
27	Computer Science & Engg.	300818(22)	Big Data and Hadoop

Note (1) 1/4th of total strength of students is required to offer an elective in thecollege in a particular academic session.
   (2) -   Choice of elective course once made for an examination cannot be changed