Sapthagiri College of Engineering

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi)

#14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru – 560057

1.2.1 Percentage of programs in which Choice based Credit system (CBCS) / Elective course system has been implemented

INDEX

Visvesvaraya Technological University
Jnana Sangama", Belagavi-590 018, Karnataka State

Registrar

Phone: (0831) 2498100
Fax: (0831) 2405467

Ref. VTU/ACA-LIC/2019-20/SO/ 5583/124

Date: 5 OCT 2019

AFFILIATION NOTIFICATION

Sub: Continuation/Extension of Affiliation for the Academic Year 2019-20

Ref: 1. Executive Council Resolution No. 2.1.2 dated 17-March-2019
2. Vice Chancellor's order dated 13-September-2019

In Exercise of the powers conferred to the University vide Section 40(9) of Visvesvaraya Technological University Act 1994, your college is granted Continuation / Extension of Affiliation for the Academic Year 2019-20 to offer the following Courses. This permission is subject to the fulfillment of the conditions stipulated by the LIC Compliance Review Committee(refer Annexure A). You are required to comply with the same prior to LIC visit for the Academic Year - 2020- 2021.

Courses

Course	Year of Starting	Present Intake	Proposed Intake	VTU Intake	VTU Recommendation	Applicable From	Applicable To
Computer Science and Engineering - PG	2012	24	24	0	TA	2019-20	2019-20
VLSI Design and Embedded System - PG	2012	24	24	0	TA	2019-20	2019-20
Electronics & Communication Engineering - UG	2001	120	120	120	TA	2019-20	2019-20
Biotechnology - UG	2004	60	60	60	TA	2019-20	2019-20
Civil engineering - UG	2014	60	60	60	TA	2019-20	2019-20
Computer Science & Engineering - UG	2001	120	120	120	TA	2019-20	2019-20
Electrical & Electronics Engineering - UG	2004	120	120	120	TA	2019-20	2019-20
Information Science & Engineering - UG	2001	120	120	120	TA	2019-20	2019-20
Mechanical Engineering - UG	2001	120	120	120	TA	2019-20	2019-20

NOTE:

1. All the courses for which government notification is not obtained either for starting of a new course or for permanent affiliation, this notification is subject to the approval of State Government of Karnataka. If already obtained, send a copy to the University.
2. TA- Temporary Affiliation, PA/PR - Permanent Affiliation

Further, the college is also informed to follow any other Notification/Circular/Norms Issued by AICTE / UGC / State Government / VTU in this regard.

Encl: Annexure A

REGISTRAR

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Visvesvaraya Technological University
"Jnana Sangama", Belagavi - 590 018.

Dr. H. N. Jagannatha Reddy, BE, ME, Ph.d.
REGISTRAR

Phone: (0831) 2405468
Fax : (0831) 2405467

Ref No. VTU/Aca/2018-19/ 4850

Date: 4 SEP 2018

MEETING NOTICE
Sub: Meeting of Joint Board of Studies.
Ref: Hon'ble Vice Chancellor's Approval dated:4-9-2018

With reference to the above subject, the Joint Board of Studies Meeting is convened on 17th September 2018 at 11.00 a.m. at VTU's Regional Office, Kusnoor Road, Kalaburagi to discuss on the following Agenda:

AGENDA:
1. To get approval for the 1st year B.E/B. Tech and B. Arch 2018 Scheme and Syllabus
2. To get approval for the 1st year B.E/B. Tech and B. Arch 2018 Regulations
3. Finalise the M. Tech., MBA, MCA, and M. Arch 2018 Scheme and Syllabus
4. Finalise the M. Tech., MBA, MCA, and M. Arch 2018 Regulations
5. Finalise introduction of Cyber Law Course at UG level as per the recommendation of KSHEC Bengaluru
6. To discuss on the course offered by National Power Training Institute Faridabad Equivalent to 3 credits of B.E Programme
7. Finalize the scheme and syllabus submitted by EC/CS/E&IE Composite Board prepared new PG programme i.e M.Tech in Artificial Intelligence and Machine Learning @VIAT Muddenhalli.
8. Equivalence of subjects branch CBCS and Non-CBCS Vica –versa
9. To discuss &finalise the grouping of subjects as a course work for Ph.D programme from 2018-19
10. Other matters with permission of the chair

Table Agenda
1. Equivalence Certificate for B.E Electronics and Communication Engineering is equivalent to Electronics Engineering
2. Additional requirement for earning 4/5 years Degree Programme Activity points.
3. Proposal for starting M.Tech Food Technology Course. Submitted by Jyothy Institute of Technology Bangalore
4. Request to change the Nomenclature from Telecommunication Engineering to " Electronics and Telecommunication Engineering"
5. To discuss on the courses of 15CPH 18/28 Kannada /Constitution of India, Professional Ethics and Human Rights for 2015-16 scheme. Who have admitted in 2017-18 scheme

The Dean, Faculty of Engineering, VTU & Chairmen of all BoS are requested to make it convenient to attend the meeting. TA and Sitting Fee will be borne by the University to the members attending the meeting as per the VTU norms.

Sd/-
REGISTRAR

To,
1. Dr. H. C. Nagaraj, Dean Faculty of Engineering, VTU, Belagavi & Principal, Nitte Meenakshi Inst. of Technology, Bengaluru.
2. Dr.D.S.Suresh, Special Invitee, Prinicpal, Channabasaveshwara Institute of Technology, Gubbi
3. Dr. C N Chandrappa, EC Member of VTU, Special Invitee, Acharya College of Engineering, Bengaluru
4. Dr. K Ramachandra BOS in Aeronautical Engg. of VTU, Belagavi, Retd Director, GTRE 600/1, 10th Cross, 7th Block, West Jayanagara, Bengaluru-560082
5. Dr. Omprakash S Bawane, Chairman, BOS in Architecture of VTU, Belagavi & Professor, RV School of Architecture, Bengaluru.
6. Dr. Nandkishore, Chairman, BOS in Automobile Engineering of VTU, Belagavi & Professor, Dept. of Automobile, Guru Nanak Dev Engineering College, Bidar
7. Dr. A. T. Eswara, Chairman, BOS in Basic Sciences of VTU, Belagavi & Professor, Dept. of Mathematics, GSSS Institute of Engineering & Technology, Mysuru.
8. Dr. S. M. Gopinath, Chairman, BOS in Bio-Technology of VTU, Belagavi & Professor, Acharya Institute of Technology, Bengaluru..
9. Dr. Gururaj Rao P Desai, Chairman, BOS in Chemical Engineering / Polymer Science of VTU, Belagavi & Professor, Dept. of Chemical Engg, Bapuji Institute of Engineering & Technology, Davangere.
10. Dr. Aswath M. U., Chairman, BOS in Civil Engg. of VTU, Belagavi & Principal, Bangalore Institute of Technology, Bengaluru.

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Sapthagiri College of Engineering
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Bengaluru - 560 057

A

Table Agenda:
1. Equivalence Courses for Change of Scheme Students.
2. Mention of paper setting Board.
3. M.Sc Physics consideration for Eligibility in M.Tech (Renewable Energy).
4. Any other matter with the permission of the chair

Minutes of the Meeting:

Registrar, Dr. H.N. Jagannatha Reddy, welcomed the Honorable Vice-Chancellor. Dr. Karisiddappa, Chairmen of Board of Studies and all the members present. He requested Honorable Vice- Chancellor for further proceedings.

Honorable Vice-Chancellor, Dr. Karisiddappa once again welcomed all the members and briefed on the agenda. Honorable Vice-Chancellor requested members for discussions and deliberations. After detailed deliberations the following resolutions were made.

Agenda -1	:	Finalization of the Scheme for B.E/B.Tech Programme for 2018-19 scheme (as per AICTE Model Curriculum).
Resolution	:	1. Resolved to incorporate the following to the Scheme of Teaching and Examination of UG programme 2018-19.
		(a) In order to provide sufficient time for the learners in tutorial classes, it is decided to assign one credit to 2 hour tutorial/week/semester in lieu of earlier decision that one credit to 1 hour tutorial/week/semester.
		(b) To provide ample opportunity for teaching – learning exercise of two credit English course, the consensus of the Board was to have the course both in I and II semesters instead of limiting it only to II semester.
		(i) Further, designate the course as Language Laboratory I (English) for I semester and Language Laboratory II (English) for II semester. Each course to carry a credit of one.
		(ii) Consider the course under practical heading.
		(iii) Course outcome assessment to be through CIE only.
		(c) (i)The III semester course Kannada to be taught as vyavaharika kannada (Communication Kannada) to non-kannada speaking students/ to students who have not studied kannada during schooling and Aadalithathmaka Kannada (Administrative Kannada) to students who can read and write kannada and have studied kannada during schooling.
		(ii) Consider the course under practical heading.
		(iii) Course outcome assessment to be through CIE only.
		(d) Title of the course Civil Engineering and Mechanics of I / II semester to be modified as Elements of Civil Engineering and Mechanics.
		(e) Title of the course Computer Programming Laboratory of I / II semester to be modified as C Programming Laboratory.
		(f) Assess the VII semester BE/B.Tech course project work Phase -1 through CIE only.
		(2)Four Professional Elective Courses to be assigned to BE/B.Tech programmes; One for VI semester, two for VII semester and one for VIII semester.

	:	3.(i) Two Open Elective Courses to be assigned to BE/B.Tech programmes; One each during VI and VII semesters. (ii) Constitute a Committee with Dean, Engineering as Chairman, Chairpersons of Board of Studies and Advisors of VTU as members for finalization of BE/B.Tech Open Electives. 4. Board authorized the Vice-Chancellor to finalize the BE/B.Tech Regulations 2018 – 19 and Scheme of Teaching and Examination. 5. Board of Studies to submit the Scheme of Teaching and Examination and syllabus pertaining to III to VIII semesters of BE/B.Tech/ B.Arch programmes on or before 30th June 2018.
Agenda -2	:	Finalization of the Scheme for M.Tech, MCA, MBA and M.Arch Programme for 2018-19 scheme (as per AICTE Model Curriculum).
Resolution	:	(1) Revise the credits of postgraduate programmes to be on par with the credits prescribed for autonomous colleges under VTU from the academic year 2018 -19. The table 1 shows previous and revised credits prescribed for the postgraduate programmes.

Table -1
Credits prescribed for different Postgraduate programmes

Postgraduate programmes	Credits as per the decision of	
	JBOS held on 27 - 03 - 2018	JBOS held on 11 - 06 - 2018
M. Tech.	72	88
M. Arch.	100	100
M.B.A.	102	100
M.C.A.	125	132
MCA (Lateral Entry)	--	88

		(2) Marks for evaluation of each course to be 100; SEE and CIE to be in the ratio 60:40. (3) Evaluation of Technical seminar and Project work phase 1 to be through CIE only. (i) The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and Question and Answer session in the ratio 50:25:25. (ii) The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25. (4)Recent two year MCA Programme sanctioned by AICTE, is to be reckoned as II and III years of the three year MCA programme for which BCA/B.S.c Graduates are only eligible under lateral entry scheme.
Agenda -3	:	To adopt teaching days as 180 in a Year as per UGC.
Resolution	:	Resolved to adopt 180 or more teaching days in an academic Calendar as per UGC norms and to have at least 90 teaching days per semester.

Table Agenda

18 OB 6.2 (continued)							

<table>
<tr><th colspan="7" style="background:yellow">(a) SGPA and CGPA Calculations: An Illustrative Example for one academic year</th></tr>
<tr><th>Semester (Odd:I,E ven:II)</th><th>Course Number</th><th>Credits</th><th>Grade</th><th>Grade Points</th><th>Credit Points</th><th>SGPA, CGPA</th></tr>
</table>

Semester (Odd:I,Even:II)	Course Number	Credits	Grade	Grade Points	Credit Points	SGPA, CGPA
I	XX101	5:0:0 = 5	B	8	$5 \times 8 = 40$	
I	XX102	3:2:0 = 5	Absent(F)	0	$5 \times 0 = 00$	
I	XX103	3:0:0 = 3	A	9	$3 \times 9 = 27$	$SGPA = \dfrac{117}{25} = 4.68$
I	XX104	0:1:1 = 2	F	0	$2 \times 0 = 00$	
I	XX105	4:1:0 = 5	D	6	$5 \times 6 = 30$	
I	XX106	5:0:0 = 5	E	4	$5 \times 4 = 20$	
	Total	25 (18*)	Total		117	

(18*): Total credits of the semester excluding the credits of the courses under F grade. Considered for the calculation of CGPA of the two consecutive semesters under consideration.

Semester	Course Number	Credits	Grade	Grade Points	Credit Points	SGPA, CGPA
II	XX107	3:1:1 = 5	C	7	$5 \times 7 = 35$	
II	XX108	4:0:0 = 4	B	8	$4 \times 8 = 32$	$SGPA - \dfrac{157}{25} - 6.28$
II	XX109	3:0:0 = 3	D	6	$3 \times 6 = 18$	
II	XX110	4:1:0 = 5	E	4	$5 \times 4 = 20$	
II	XX111	2:1:1 = 4	A	9	$4 \times 9 - 36$	$CGPA$
II	XX112	2:0:0 = 2	F	0	$2 \times 0 = 00$	$= \dfrac{(117 + 157)}{18 + 23}$
II	XX113	0:2:0 = 2	B	8	$2 \times 8 = 16$	$= 274/41 = 6.68$
	Total	25 (23*)	Total		157	

(23*): Total credits of the semester excluding the credits of the courses under F grade. Considered for the calculation of CGPA of the two consecutive semesters under consideration.

If the Student secures letter grades as detailed below after reappearance to SEE, then the SGPA and CGPA shall be calculated as indicated below.

Semester	Course Number	Credits	Grade	Grade Points	Credit Points	SGPA, CGPA
I	XX102	3:2:0 = 5	D	6	$5 \times 6 = 30$	$SGPA\ (I\ Semester)$
I	XX104	0:1:1 = 2	C	7	$2 \times 7 = 14$	$- (117 + 30 + 14)/25$ $= 161/25 = 6.44$
II	XX112	2:0:0 = 2	D	6	$2 \times 6 = 12$	$SGPA\ (II\ Semester)$ $= (157 + 12)/25$ $= 169/25 = 6.76$

CGPA at the end of the academic year after passing all the Courses of the two consecutive semesters under consideration $= \dfrac{(6.44 \times 25 + 6.76 \times 25)}{50} = 6.60$ ▣

<table>
<tr><th colspan="9">(b) CGPA Calculation of the Programme:An Illustrative Example</th></tr>
<tr><th>Semester</th><th>I</th><th>II</th><th>III</th><th>IV</th><th>V</th><th>VI</th><th>VII</th><th>VIII</th></tr>
<tr><td>Credits of the semester</td><td>20</td><td>20</td><td>24</td><td>24</td><td>25</td><td>24</td><td>20</td><td>18</td></tr>
<tr><td>SGPA</td><td>7.00</td><td>8.50</td><td>9.20</td><td>6.86</td><td>8.18</td><td>7.73</td><td>8.68</td><td>9.40</td></tr>
</table>

$$CGPA = \frac{(20 \times 7.00 + 20 \times 8.50 + 24 \times 9.20 + 24 \times 6.86 + 25 \times 8.18 + 24 \times 7.73 + 20 \times 3.68 + 18 \times 9.40)}{175}$$
$$= 8.16 \ ▣$$

18 OB 6.3	**Grade Card:** Based on the secured letter grades, grade points, SGPA and CGPA, a grade card for each semester and a consolidated grade card indicating the performance in all semesters shall be issued. ▣

Visvesvaraya Technological University
"Jnana Sangama", Belagavi - 590 018

REGISTRAR

Phone: (0831) 2405468
Fax : (0831) 2405467

Ref. No. VTU/Aca/A6/2014-15/*1379*

Date: **2 5 MAY 2015**

CIRCULAR

This is to bring to the notice of the Principals of affiliated Engineering colleges that,

"As per the directions of University Grants Commission, New Delhi, the Choice Based Credit System (CBCS) will be introduced for B.E./B.Tech. Programs from the academic year 2015-16. In light of this it is decided to retain 2010 syllabus to the students admitted to B.E./B.Tech. during the academic year 2014-15".

Hence, the students who are admitted to:

1. *FIRST Semester B.E./B.Tech. during the academic year 2014-15 will study the 2010 scheme and syllabus from III to VIII Semesters without any modification,*
2. *THIRD Semester B.E./B.Tech. (Lateral Entry) during the academic year 2015-16 will study the 2010 scheme and syllabus from III to VIII Semesters without any modification, and*
3. *The Question Paper Pattern (answering 5 out of 8 questions) will remain the same as that of the 2010 scheme.*

The Principals of affiliated Engineering Colleges are requested to bring the contents of this circular to the notice of all the concerned.

Sd/-
REGISTRAR
(Dr. K. E. Prakash)

To, The Principals of affiliated Engineering colleges.

Copy FWCs to:
1. The Registrar (Evaluation), VTU Belgaum, for information and needful.
2. The Special Officers of VTU Regional Offices, for information.
3. The Special Officer, Academic Section, VTU, for information.
4. The Secretary to VC, VTU Belgaum, for information.

REGISTRAR
(Dr.K.E.Prakash)

Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road
Bangalore-560 057

CHOICE BASED CREDIT SYSTEM (CBCS)
REGULATIONS GOVERNING
THE DEGREE OF BACHELOR OF ENGINEERING / TECHNOLOGY
(B.E./B.Tech.)

15OB 1	**TITLE AND DURATION OF THE PROGRAMME OF STUDY**
15OB 1.1	The program of study shall be called the degree Program of study in Bachelor of Engineering / Technology Course, abbreviated as B.E. / B.Tech.
15OB 1.2	The program shall be of four academic years duration divided into eight semesters, each semester having duration of 16 weeks. For evening courses the contact hours are to be satisfied by working extra on afternoons of Saturdays and Sundays.
15OB 1.3	The calendar of events in respect of the program of study shall be fixed by the University from time to time.
15OB 1.4	The examination in all programs of study shall be conducted at the end of each semester for all eight semesters.
15OB 2	**ELIGIBILITY FOR ADMISSION** (The Government orders issued from time to time in this regard shall prevail).
15OB 2.1	Admission to I year / I semester Bachelor Degree in Engineering / Technology shall be open to the students who have passed the second year Pre-University or XII standard or equivalent examination recognized by the University. For the prerequisite qualification earned from foreign countries, Equivalence certificate from the Association of Indian Universities is Mandatory. The decision of the Equivalence committee shall be final in establishing the eligibility of student.
15OB 2.2	In addition to 15OB 2.1, the student shall have secured not less than forty five percent (45%) marks in the aggregate with Physics and Mathematics as compulsory subjects, along with any one of the following subjects, namely, Chemistry, Bio-Technology, Computer Science, Biology and Electronics or as decided by the Government of Karnataka. Provided that, the minimum marks for the purpose of eligibility shall be forty percent (40%) in optional subjects in case of students belonging to SC/ST and OBC students from Karnataka or as decided by the Government of Karnataka. Provided further that, the student shall have studied and passed English as one of the subjects.

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i. The VTU adopts absolute grading system wherein the marks are converted to grades, and every semester results will be declared with semester grade point average (SGPA) and Cumulative Grade Point Average (CGPA). The CGPA will be calculated every semester, except the first semester.

ii. The grading system is with the following letter grades as given below:

Grades and Grade Points

Level	Out-standing	Excellent	Very Good	Good	Above Average	Average	Poor	Fail
Grade	**O**	**S**	**A**	**B**	**C**	**D**	**E**	**F**
Grade Points	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**00**

iii. A student obtaining Grade "F" shall be considered failed and will be required to reappear in the examination.

Such students after passing the failed subject in subsequent examination/s will be awarded with "E" grade irrespective of marks he/she scores in the subsequent examination/s.

Number of attempts taken to clear a subject/s shall be shown in the transcripts.

Grade Points Scale

Level	Out-standing	Excellent	Very Good	Good	Above Average	Average	Poor	Fail
Grade	**O**	**S**	**A**	**B**	**C**	**D**	**E**	**F**
Grade Points	10	09	08	07	06	05	04	00
Score (Marks) Range (%)	≥ 90	<90 ≥ 80	< 80 ≥ 70	< 70 ≥ 60	< 60 ≥ 50	< 50 ≥ 45	<45 ≥ 40	< 40

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Bangalore- 560 057

Illustration No.2

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	4	A	8	4x8 = 32
Course 2	4	C	6	4x6 = 24
Course 3	4	B	7	4x7 = 28
Course 4	3	O	10	3x10= 30
Course 5	3	F	0	3x0 = 00
Course 6	3	C	6	3x6 = 18
Course 7	2	S	9	2x9 = 18
Course 8	2	C	6	2x6 = 12
	25			162

Thus, **SGPA= 162/25=6.48**

Illustration No.2(a)

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 5	3	E	4	3x4 =12
	25			Ci (First Attempt)162 + Ci (subsequent attempt) 12= 174

Thus, **SGPA= 174/25=6.96**

Illustration No.3

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	4	A	8	4x8 =32
Course 2	4	C	6	4x6 =24
Course 3	4	B	7	4x7 =28
Course 4	3	O	10	3x10=30
Course 5	3	S	9	3x9 =27
Course 6	3	C	6	3x6 =18
Course 7	2	S	9	2x9 =18
Course 8	2	C	6	2x6 =12
	25			189

Thus, **SGPA= 189/25=7.56**

$$CGPA= \frac{25x6.96 + 25x7.56}{50} = 7.26$$

CGPA after Final Semester

Sem.- 1	Sem. - 2	Sem. - 3	Sem. - 4	Sem. - 5	Sem. - 6	Sem. - 7	Sem. - 8
Credit : 25 SGPA:7	Credit:25 SGPA:8.5	Credit : 27 SGPA:9.2	Credit : 27 SGPA:6.86	Credit :27 SGPA:8.18	Credit : 24 SGPA:7.73	Credit : 24 SGPA:8.68	Credit : 24 SGPA:9.4

Thus, **CGPA**= $\frac{25x7 + 25x8.5 + 27x9.2 + 27x6.86 + 24x8.18 + 24x7.73 + 24x8.68 + 24x9.4}{200}$ =**8.18**

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Visvesvaraya Technological University
"Jnana Sangama", Belagavi - 590 018

Dr. H. N. Jagannatha Reddy, BE.,ME., Ph.d.
REGISTRAR

Phone: (0831) 2405468
Fax   : (0831) 2405467

Ref No. VTU/Aca/A12/2017-18/ 3615

Date: 5 AUG 2017

CIRCULAR

Sub: Introduction of Open Elective- reg

It is hereby informed, that university has introduced Open Electives concept for B.E CBCS Scheme in 5th and 6th semester, you are informed to note the following guidelines in offering of Open Electives (guidelines enclosed) and bring the same to the notice of students and faculty. The Course coordinator for offering open elective has to be identified in each department for proper implementation of the concept.

Sd/-
REGISTRAR

To,
The Principals of Affiliated Engineering Colleges.

Copy FWCs to:
1. The Hon'ble Vice Chancellor, through the Secretary to VC, VTU Belagavi, for information
2. The Registrar, VTU Belagavi, for information.
3. The Registrar (Evaluation), VTU Belagavi, for information & necessary action.
4. The In-Charge Regional Director of VTU Regional Offices, for information.
5. The Office Superintendent, for information.
6. CNC to upload on the website.

05/08/17
REGISTRAR

Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road
Bangalore- 560 057

Guidelines for offering Open Elective for the B.E 5th & 6th Semester (CBCS) scheme

Note to Students:

1) All B.E (CBCS) students (except B.Arch, B.Tech) should study one Open elective each in the 5th and 6th Semester as a part of their Programme.

2) Students should register for the Open elective in the beginning of the 5th/6th semester in the department, where the elective is offered. An Open elective is not offered in a department if the registered student's strength is less than 10.

3) All Open electives are offered to students of all B.E Programmes (branches) of engineering in general (except B.Arch, B.Tech). However, if a student of a particular Programme has already studied/going to study, in higher semester a similar Core course with majority of topics same as that of a particular Open elective, then that Open elective is not offered to that student. In which case, the student has to select an alternative Open elective.

4) Having studied/selected a particular Open Elective, a student is not eligible to take a Professional elective of his/her Programme in the Higher semesters/same semester which will have majority of topics same as that of the Open elective studied/selected. In which case, the student has to select an alternative Professional elective.

5) Students are advised to select an Open elective of their interest and if they have a pre-requisite knowledge to study that particular Open elective.

Note to Departments:

1) Above conditions are to be monitored by an Open elective coordinator of the department to which the student belongs to and the Course coordinator of the department where the student registers for the Open elective in the beginning of the 5th/6th semester.

2) The Teaching department(s) for Open Elective is not restricted to only those departments(s) indicated in the list. Any other department faculty who has the requisite expertise to teach a particular Open elective can also teach it.

3) Offering department indicated in the list of Open electives is the department/board which is responsible to set the Syllabus and Question paper for the particular Open elective.

Principal
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Bangalore- 560 057

REGISTRAR
Visvesvaraya Technological University,
BELAGAVI - 590 018.

B.E (CBCS) 5th Semester Open Electives List:

SL No	Course Code	Course Title	Teaching Department(s)	Offering Department(s)
1	15NC561	Essentials of NCC	This can be offered only in the Colleges having the NCC unit	Dept. offering the course
2	15PHY561	Laser Physics and Non-linear Optics	Physics	Basic Science (Physics)
3	15CV561	Traffic Engineering	CV	CV
4	15CV562	Sustainability Concepts In Engineering	CV	CV
5	15CV563	Remote Sensing and GIS	CV	CV
6	15CV564	Occupational Health and Safety	CV	CV
7	15ME561	Optimization Techniques	Any Branch	ME
8	15ME562	Energy and Environment	ME/Auto	ME
9	15ME563	Automation & Robotics	ME/EC/Auto	ME
10	15ME564	Project Management	ME/Auto	ME
11	15IM/IP561	Professional Communication &Report Writing	Any Branch	IP/IEM
12	15IM/IP562	Concurrent Engineering	Any Branch	IP/IEM
13	15IM/IP563	Technology Management	Any Branch	IP/IEM
14	15IM/IP564	Human Resource Management	Any Branch	IP/IEM
15	15MA561	Mechatronics	Manufacturing Sc. &Engg	Manufacturing Sc. &Engg
16	15MA562	Theory of Elasticity	Manufacturing Sc. &Engg	Manufacturing Sc. &Engg
17	15MA563	Knowledge Management	Manufacturing Sc. &Engg	Manufacturing Sc. &Engg
18	15EC561	Automotive Electronics	EC/TC/Mech	EC/TC
19	15EC562	Object Oriented Programming using C++	CS/IS/EC/TC/EE	EC/TC
20	15EC563	8051 Microcontrollers	EC/TC	EC/TC
21	15EE561	Electronic Communication Systems	EE/EC/TC	EE
22	15EE562	Programmable Logic Controllers	EE	EE
23	15EE563	Renewable Energy Sources	EE/ME	EE

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24	15EE564	Business Communication	EE	EE
25	15CS561	Programming in JAVA	CS/IS	CS
26	15CS562	Artificial Intelligence	CS/IS/EC	CS
27	15CS563	Embedded Computing Systems	CS/IS/EE/EC	CS
28	15CS564	Dot Net Frame work for Application Development	CS/IS	CS
29	15CS565	Cloud Computing	Cloud Computing	CS
30	15EI/BM/ML561	Computer Organization	EI/BM/ML/CS/IS	EI/BM/ML
31	15EI562	Material Science	EI	EI
32	15BM/ML562	Virtual Bio-Instrumentation	BM/ML/EI	BM/ML/EI
33	15EI/BM563	Operating Systems	EI/BM/CS/IS/EC	EI/BM
34	15ML563	Medical Electronics Design	ML/BM	ML/BM
35	15EI564	Fundamentals of Nanotechnology	EI	EI
36	15BM564	Medical Physics	BM/ML	BM/ML
37	15ML564	Pharmacology and Drug Delivery	ML/BM	ML/BM
38	15BT561	Biology for Engineers	Bio-Tech	Bio-Tech
39	15BT562	Biomaterials	Bio-Tech	Bio-Tech
40	15BT563	BT for Sustainable Environment	Bio-Tech	Bio-Tech
41	15AE561	History of Flight & Technology Forecast	Aeronautical Engg.	Aeronautical Engg.
42	15AE562	Elements of Aeronautics	Aeronautical Engg.	Aeronautical Engg.
43	15AE563	Aircraft Transportation Systems	Aeronautical Engg.	Aeronautical Engg.
44	15AE564	Basics of Rockets & Design	Aeronautical Engg.	Aeronautical Engg.
45	15NT561	Introduction to Nano Science & Technology	Nanotechnology/ME	Nanotechnology
46	15NT562	Nanomaterials& their Applications	Nanotechnology/ME	Nanotechnology
47	15NT563	Nano Devices & Applications	Nanotechnology	Nanotechnology
48	15NT564	Nano Materials Synthesis & Characterization Techniques	Nanotechnology/ Chemistry/ME	Nanotechnology
49	15CH561	Industrial Waste Water Management	Chemical	Chemical
50	15CH562	Design of Air Pollution control Equipment	Chemical	Chemical
51	15CH563	Solid Waste Management	Chemical	Chemical
52	15CH564	Industrial Safety & Disaster Management	Chemical	Chemical
53	15PC561	Composite Materials	Petro-Chem	Petro-Chem
54	15PC562	Organic Chemistry	Petro-Chem	Petro-Chem

55	15PC563	Reservoir Rocks & Fluid Properties	Petro-Chem	Petro-Chem
56	15PC564	Natural Gas Processing	Petro-Chem	Petro-Chem
57	15AU561	Automobile Engineering	Automobile Engineering	Automobile Engineering
58	15AU562	Alternative Energy Sources for Automobiles	Automobile Engineering	Automobile Engineering
59	15AU563	Non Traditional Machining	Automobile Engineering	Automobile Engineering
60	15MN561	Industrial Safety Management	Mining Engineering	Mining Engineering
61	15MN562	Industrial Management and Entrepreneurship	Mining Engineering	Mining Engineering

B.E (CBCS) 6th Semester Open Electives List:

SL No	Course Code	Course Title	Teaching Department(s)	Offering Department(s)
1	15PHY661	Advanced Physics for Engineers	Physics	Basic Science (Physics)
2	15CV661	Water Resources Management		
3	15CV662	Environmental protection and management	CV	CV
4	15CV663	Numerical Methods and Applications	Any Branch/Maths	CV
5	15CV664	Finite element Method	CV	CV
6	15ME661	Energy Auditing	ME/Auto	ME
7	15ME662	Total Quality Management	ME/Auto/IEM	ME
8	15ME663	Maintenance Engineering	ME/Auto	ME
9	15ME664	Industrial Safety	ME/Auto	ME
10	15IM/IP661	Management Information Systems	IP/IEM	IP/IEM
11	15IM/IP662	Advance Machining Process	IP/IEM	IP/IEM
12	15IM/IP663	Value Engineering	IP/IEM	IP/IEM
13	15IM664	Development of Enterprises	IEM	IEM
14	15MA661	Microprocessor & Microcontrollers	Manufacturing Science &Engg	Manufacturing Science &Engg
15	15MA662	Theory of Plasticity	Manufacturing Science &Engg	Manufacturing Science &Engg
16	15MA663	Sensors	Manufacturing Science &Engg	Manufacturing Science &Engg
17	15MA664	Data Mining	Manufacturing	Manufacturing

			Science &Engg	Science &Engg
18	15EC661	Data Structures Using C++	CS/IS/EC/TC	EC/TC
19	15EC662	Power Electronics	EC/TC/EE	EC/TC
20	15EC663	Digital System Design using Verilog	EC/TC	EC/TC
21	15CS661	Mobile Application Development	Any Branch	CS
23	15CS662	Big Data Analytics	CS/IS	CS
24	15CS663	Wireless Networks and Mobile Computing	CS/IS	CS
25	15CS664	Python Application Programming	CS/IS	CS
26	15CS665	Service Oriented Architecture	CS/IS	CS
27	15CS666	Multi-Core Architecture and Programming	IS	CS/IS
28	15EE661	Artificial Neural Networks and Fuzzy Logic	EE/EC	EE
29	15EE662	Sensors and Transducers	EE/EC	EE
30	15EE663	Batteries and Fuel Cells for Commercial, Military and Space Applications	EE	EE
31	15EE664	Industrial Servo Control Systems	EE	EE
32	15EI/BM/ML 661	Mobile Communication	EI/BM/ML/EC/TC	EI/BM/ML
33	15EI662	MEMS and NEMS	EI/BM	EI/BM
34	15BM662	Software Engineering	BM/CS/IS	BM
35	15ML662	Embedded Real Time Systems	ML/BM	ML/BM
36	15EI/BM/ML 663	Embedded System Design and Programming	EI/BM/ML	EI/BM/ML
37	15EI/BM664	Statistics and Numerical Methods	EI/BM/Maths	EI/BM
38	15ML664	Biomaterials and Artificial Organs	ML/BM	ML/BM
39	15MAT661	Linear Algebra	Maths/EC	Basic Science (Maths)
40	15BT661	Biological Data Management	Bio-Tech	Bio-Tech
41	15BT662	Nano BT	Bio-Tech	Bio-Tech
42	15BT663	Good Manufacturing Process	Bio-Tech	Bio-Tech
43	15CH661	Food technology	Chemical	Chemical
44	15CH662	Sugar Technology	Chemical	Chemical
45	15CH663	Petro Chemical Engineering	Chemical	Chemical
46	15CH664	Polymer & Plastic Engineering	Chemical	Chemical
47	15PC661	Modern Separation Technology	Petro-Chem	Petro-Chem
48	15PC662	Process Modelling& Simulation	Petro-Chem	Petro-Chem
49	15PC663	Material Science for Petro-Chemical Engineering	Petro-Chem	Petro-Chem
50	15PC664	Catalysis Science & Technology	Petro-Chem	Petro-Chem

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51	15AE661	Unmanned Aerial Vehicles Basics & Applications	Aeronautical Engg.	Aeronautical Engg.
52	15AE662	Fundamentals of Aerodynamic Theory	Aeronautical Engg.	Aeronautical Engg.
53	15AE663	Elements of Jet Propulsion Systems	Aeronautical Engg.	Aeronautical Engg.
54	15AE664	Maintenance, Overhaul & Repair of Air Craft Systems	Aeronautical Engg.	Aeronautical Engg.
55	15NT661	Nanotechnology in Electrical & electronics Engineering	Nanotechnology/EE/EC	Nanotechnology
56	15NT662	Nanotechnology in Civil & Environmental Engineering	Nanotechnology /CV/EV	Nanotechnology
57	15NT663	Nanotechnology in Mechanical & Aerospace Engineering	Nanotechnology/ME/AE	Nanotechnology
58	15NT664	Nanotechnology in Bio-Medical Engineering	Nanotechnology/BM/BT	Nanotechnology
59	15AU661	Engineering Economics and Cost Estimation	Automobile Engineering	Automobile Engineering
60	15AU662	Hybrid and Electric Vehicle	Automobile Engineering	Automobile Engineering
61	15AU663	Non- destructive Testing	Automobile Engineering	Automobile Engineering
62	15MN661	Tunneling Engineering	Mining Engineering	Mining Engineering
63	15MN662	Underground Space Technology	Mining Engineering	Mining Engineering

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(Effective from the academic year 2017 – 18)

12) **Semester end examinations (SEE):** Refers to examination conducted at the University level covering the entire Course Syllabus. For this purpose, Syllabi to be modularized and SEE questions to be set from each module, with a choice confined to the concerned module only. SEE is also termed as university examination.

13) **First Attempt:** Refers to a student who has completed all formalities and has become eligible to attend the SEE and has attended at least one head of passing, such attempt shall be considered as first attempt.

14) **Credit Based System (CBS):** Refers to quantification of Course work, after a student completes teaching – learning process, followed by passing in both CIE and SEE. Under CBS, the requirement for awarding degree is prescribed in terms of total number of credits to be earned by the students.

15) **Credit Representation:** Refers to Credit Values for different academic activities considered, as per the Table.1. Credits for seminar, project phases, project viva–voce and internship shall be as specified in the Scheme of Teaching and Examination (Annexure -1).

Table 1: Credit Values

Theory/Lectures (L) (hours/week/Semester)	Tutorials (T) (hours/week/Semester)	Laboratory/Practical (P) (hours/week/Semester)	Credits (L:T:P)	Total Credits
4	0	0	4:0:0	4
3	0	0	3:0:0	3
2	2	0	2:1:0	3
2	0	2	2:0:1	3
2	2	2	2:1:1	4
0	0	6	0:0:3	3

NOTE: Activities like, practical training, study tour and participation in Guest lectures not to carry Credits.

16) **Letter Grade:** It is an index of the performance of students in a said Course. Grades are denoted by letters S, A, B, C, D, E and F.

17) **Grading:** Grade refers to qualitative measure of achievement of a student in each Course, based on the percentage of marks secured in (CIE plus SEE). Grading is done by Absolute Grading [Refer: 17OB6.0]. The rubric attached to letter grades are as follows:
S – Outstanding, A – Excellent, B – Very Good, C – Good, D – Above Average, E – Average and F – Fail.

18) **Grade Point (GP):** Refers to a numerical weightage allotted to each letter grade on a 10-point scale as under.

Letter Grade and corresponding Grade Points on a typical 10 – Point scale						
Letter Grade	S	A	B	C	D	E	F
Grade Point	10	09	08	07	06	04	00

19) **Passing Standards:** Refers to passing a Course only when getting GP greater than or equal to 04 (as per serial number 18).

20) **Credit Point:** Is the product of grade point (GP) and number of credits for a Course i.e.,
Credit Point (CrP) = GP ×Credits for the Course

21) **Semester Grade Point Average (SGPA):** Refers to a measure of academic performance of student/s in a semester. It is the ratio of total credit points secured by a student in various Courses of a semester and the total Course credits taken during that semester. [Refer:17OB6.0]

22) **Cumulative Grade Point Average (CGPA):** Is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points earned by a student in various Courses in all semesters and the sum of the total credits of all Courses in all the semesters. It is expressed up to two decimal places. [Refer: 17OB6.0]

23) **Transcript or Grade Card or Certificate:** Refers to a certificate showing the grades earned by a student. A grade certificate shall be issued to all the registered students after every semester. The grade certificate will display the programme details (Course code, title, number of credits, grades secured) along with SGPA of that semester and CGPA earned till that semester.

24) **University:** Visvesvaraya Technological University (VTU), Belagavi.

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17OB 6.2 (continued)	**Illustration for Computation of SGPA and CGPA**

Computation of SGPA

Illustration No.1

Course	Credit	Grade letter	Grade point	Credit Point = (Credit × Grade)
Course 1	4	B	08	4 × 08 = 32
Course 2	4	D	06	4 × 06 = 24
Course 3	4	C	07	4 × 07 = 28
Course 4	3	S	10	3 ×10 = 30
Course 5	3	E	04	3 × 04 = 12
Course 6	3	D	06	3 ×06 = 18
Course 7	2	A	09	2 × 09 = 18
Course 8	2	D	06	2 × 06 = 12
Total	25	--	--	174

Thus, SGPA= 174/25 = 6.96

Illustration No.2

Course	Credit	Grade letter	Grade point	Credit Point = (Credit × Grade)
Course 1	4	B	08	4 × 08 = 32
Course 2	4	D	06	4 × 06 = 24
Course 3	4	C	07	4 × 07 = 28
Course 4	3	S	10	3 × 10 = 30
Course 5	3	F	00	3 × 00 = 00
Course 6	3	D	06	3 × 06 = 18
Course 7	2	A	09	2 × 09 = 18
Course 8	2	D	06	2 ×06 = 12
Total	25	--	--	162

Thus, SGPA= 162/25=6.48

If a Student secures letter grade C during reappearance then the SGPA is Calculated as shown below.

Illustration No. 2(a)

Course	Credit	Grade letter	Grade point	Credit Point = (Credit × Grade)
Course 5	3	C	07	7× 03 = 21

Total Credit Points = Credit Points of first Attempt) + Credit Points of subsequent attempt
=162 + 21 = 183

Total credits of the semester = 25

Thus, SGPA= 183/25=7.32

Illustration No.3

Course	Credit	Grade letter	Grade point	Credit Point = (Credit x Grade)
Course 1	4	B	08	4 x 08 = 32
Course 2	4	D	06	4 x 06 = 24
Course 3	4	C	07	4 x 07 = 28
Course 4	3	S	10	3 x10 = 30
Course 5	3	A	09	3 x 04 = 18
Course 6	3	D	06	3 x 06 = 18
Course 7	2	A	09	2 x 09 = 18
Course 8	2	D	06	2 x 06 = 12
Total	25	--	--	189

Thus, SGPA= 189/25=7.56

$$CGPA \text{ (from illustratiions 2 and 3)} = \frac{25 \times 7.32 + 25 \times 7.56}{50} = 7.44$$

NOTIFICATION

Sub: Regulations Governing the Degree of B.E./ B.Tech. under OBE and CBSE (Revised-2018) – reg...

Ref: Executive Council Resolution. No. 2.2.1 dt: 30th May, 2019

Pursuant to the aforesaid Executive Council Resolution, the **"Regulations Governing the Degree of B.E./ B.Tech. under outcome Based Education and Choice Based Credit System – (Revised – 2018)"** are hereby notified.

These Regulations are applicable for the following students:

1. Admitted to I semester/I year from the academic year 2018-19 (i.e. USN XXX18XXXXX)

2. Admitted to III semester/II year from the academic year 2019-20 (i.e. USN XXX19XX4XX)

You are hereby directed to bring the same to the notice of all the concerned and to follow them scrupulously.

The previous regulations in this regard (published on VTU website and printed in syllabus books are treated as null and void.

Encl: as above

BY ORDER

01.08.2019

REGISTRAR

To,
The of Principals of All Engineering Colleges under the ambit of VTU, Belagavi

Copy to:
1. Hon'ble Vice-Chancellor through the Secretary to VC, VTU, Belagavi for kind information
2. The Registrar (Evaluation), VTU, Belagavi
3. The Regional Directors (I/C) of all the Regional Offices of VTU for circulation
4. The Computer Network Centre, VTU, Belagavi- to upload on VTU website
5. PS to Registrar, VTU, Belagavi
6. All the concerned Special Officer and Case-workers of Academic Section, VTU, Belagavi

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Effective from the Academic Year 2018 – 19

14) **Credit Based System (CBS):** Refers to quantification of Course work, after a student completes teaching – learning process, followed by passing in both CIE and SEE. Under CBS, the requirement for awarding degree is prescribed in terms of total number of credits to be earned by the students.

15) **Credit Representation:** Refers to the Credit Values for different academic activities considered, as per the Table.1 Credits for seminar, project phases, project viva–voce and internship shall be as specified in the Scheme of Teaching and Examinations.

16) **Letter Grade:**

Table 1: Credit Values				
Theory/Lectures (L) (hours/week/Semester)	Tutorials (T) (hours/week/Semester)	Laboratory/Practical (P) (hours/week/Semester)	Credits (L:T:P)	Total Credits
4	0	0	4:0:0	4
3	0	0	3:0:0	3
2	2	0	2:1:0	3
2	0	2	2:0:1	3
2	2	2	2:1:1	4
0	0	6	0:0:3	3
NOTE: Activities like, practical training, study tour and participation in Guest lectures not to carry Credits.				

It is an index of the performance of students in a said Course. Grades are denoted by letters S, A, B, C, D, E and F.

17) **Grading:** Grade refers to qualitative measure of achievement of a student in each Course, based on the percentage of marks secured in CIE and SEE. Grading is done by Absolute Grading [Refer: 18 OB 6.0]. The rubrics attached to letter grades are as follows: S – Outstanding, A – Excellent, B – Very Good, C – Good, D – Above Average, E – Average and F – Fail.

18) **Grade Point (GP):** Refers to a numerical weightage allotted to each letter grade on a 10-point scale as under.

Letter Grade and corresponding Grade Points on a typical 10 – Point scale							
Letter Grade	S	A	B	C	D	E	F
Grade Point	10	09	08	07	06	04	00

19) **Passing Standards:** Refers to passing a Course only when getting GP greater than or equal to 04 (as per serial number 18).

20) **Credit Point:** Is the product of GP and number of credits for a Course i.e.,
Credt points (CrP) = GP × Credits for the Course.

21) **Semester Grade Point Average (SGPA):** Refers to the measure of academic performance of student/s in a semester. [Refer:18OB6.2]

22) **Cumulative Grade Point Average (CGPA):** Is a measure of overall cumulative performance of a student over all semesters. [Refer:18OB6.2]

23) **Grade Card:** Refers to the certificate showing the grades earned by a student. A grade card shall be issued to all the registered students after every semester end examination. The grade card will display the Programme details (Course code, title, number of credits, grades secured) along with SGPA of that semester and CGPA earned till that semester.

24) **University:** Visvesvaraya Technological University (VTU), Belagavi.

Regulations Governing the Degree of Bachelor of Engineering/Technology (B.E./B.Tech.)
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	through concerned faculty members of the Department. The committee, constituted for the purpose by the Head of the Department, shall award the CIE marks for the seminar. The committee shall consist of two senior faculty members of the Department and the senior most acting as the Chairperson. [To be read along with 18OB8.2 (e)]
18OB 5.2	**Project: Project (Mini and Main) is one of the head of passing.** Mini Project Work and Main Project Work shall preferably be batch wise, the strength of each batch shall not exceed a maximum of four students. [To be read along with 18OB 8.2 (f), (g) 18OB8.9 (f) and the details mentioned in Scheme of Teaching and Examinations.]
18OB 5.3	Examinations in Mini Project Work and Main Project Work shall be conducted batch-wise.
18OB 6.0	**Computation of SGPA and CGPA**
18OB 6.1	(i) The University adopts absolute grading system wherein the marks are converted to grades, and every semester results shall be declared in terms of Semester Grade Point Average (SGPA) considering all the courses appeared in that Semester End Examinations including backlog course/s/arrear papers (refers to courses other than the current semester courses that have not yet been completed) and Cumulative Grade Point Average (CGPA). The CGPA will be calculated for every semester, except for the first semester. (ii) The grading system with the letter grades and the assigned range of marks under absolute grading system shall be as given below:

Level	Outstanding	Excellent	Very Good	Good	Above Average	Average	Fail
Letter Grade	S	A	B	C	D	E	F
Grade Points	10	9	8	7	6	4	00
Percentage of Marks Scored in a Course	≥ 90	<90 ≥80	< 80 ≥70	< 70 ≥60	< 60 ≥ 45	< 45 ≥40	< 40
	(90 -100)	(80 - 89)	(70 - 79)	(60- 69)	(45 - 59)	(40 - 44)	(0 - 39)

	(iii) A student obtaining Grade F in a Course shall be considered fail and is required to reappear in the subsequent SEE. Whatever the letter grade secured by the student during his /her reappearance shall be awarded. The number of attempts taken to clear Course/s shall be indicated in the grade card.
18OB6.2	**Computation of SGPA and CGPA**

The following expressions shall be used to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) respectively:

$$SGPA = \frac{\sum[Course\ Credits\ \times\ Grade\ Points]\ for\ all\ the\ Courses\ in\ that\ Semester}{\sum[Course\ Credits\ ]\ for\ all\ the\ Courses\ in\ that\ Semester}$$

$$CGPA = \frac{\sum[Course\ Credits\ \times\ Grade\ Points]\ for\ all\ Courses\ excluding\ those\ with\ F\ grades\ until\ that\ Semester}{\sum[Course\ Credits\ ]\ for\ all\ Courses\ excluding\ those\ with\ F\ grades\ until\ that\ semester}$$

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the grade cards.

(a) SGPA and CGPA Calculations: An Illustrative Example for one academic year

Semester (Odd :I, Even: II)	Course Code	Credits	Grade	Grade Points (GP)	Credit Points (CrP)	SGPA, CGPA
I	XX101	5:0:0 = 5	B	8	5x8=40	
I	XX102	3:2:0 = 5	Absent(F)	0	5x0=00	$SGPA = \frac{117}{25}$
I	XX103	3:0:0 = 3	A	9	3x9=27	$= 4.68$
I	XX104	0:1:1 = 2	F	0	2x0=00	

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I	XX105	4:1:0 = 5	D	6	5x6=30	
I	XX106	5:0:0 = 5	E	4	5x4=20	
	Total	25(18*)		Total	117	

(18*): Total credits of the semester excluding the credits of the courses under F grade. Considered for the calculation of CGPA of the two consecutive semesters under consideration.

II	XX107	3:1:1=5	C	7	5x7=35	
II	XX108	4:0:0=4	B	8	4x8=32	$SGPA = \dfrac{201}{32}$
II	XX109	3:0:0=3	D	6	3x6=18	$= 6.28$
II	XX110	4:1:0=5	E	4	5x4=20	
II	XX111	2:1:1=4	A	9	4x9=27	
II	XX112	2:0:0=2	F	0	2x0=00	$CGPA$
II	XX113	0:2:0=2	B	8	2x8=16	$= \dfrac{(117+201)}{18+30}$
I semester						$= \dfrac{318}{48} = 6.63$
I	XX102	3:2:0=5	D	6	5x6=30	
I	XX104	0:1:1=2	C	7	2x7=14	
	Total	32 (30*)		Total	201	

(30*): Total credits of the semester excluding the credits of the courses under F grade. Considered for the calculation of CGPA of the two consecutive semesters under consideration.

(b) CGPA Calculation of the Programme: An Illustrative Example

Semester	I	II	III	IV	V	VI	VII	VIII
Credits of the semester	20	20	24	24	25	24	20	18
SGPA	4.68	6.28	9.20	6.86	8.18	7.73	9.18	9.40
∑CrP	117	201	22	165	204	185	184	169

$$CGPA = \frac{[117 + 201 + 220 + 165 + 204 + 185 + 184 + 169]}{175} = \frac{[1445]}{175} = 8.26$$

18OB6.3	**Grade Card:** Based on the secured letter grades, grade points, SGPA and CGPA, a grade card for each semester and a consolidated grade card indicating the performance in all semesters shall be issued.
18OB7.0	**Conversions of CGPA into Percentage of marks and Class Equivalence**
18OB7.1	Formula for the conversion of CGPA into percentage of marks. Percentage of marks secured, P = [CGPA Earned - 0.75] × 10 Illustration for a CGPA of 8.20: P = [CGPA Earned 8.20 - 0.75]× 10 = 74.5 %
18OB7.2	**Class Equivalence:** Subsequent to the conversion of final CGPA, after successful completion of the Programme, into percentage of marks (P), a graduating student is reckoned to have passed in (i) First Class with Distinction (FCD) if P ≥ 70% (ii) First Class (FC) if P ≥ 60% but <70% and (iii) Second Class (SC) if P < 60%.
18OB8.0	**Continuous Internal Evaluation, Semester End Evaluation and Minimum CIE and SEE Marks**
18OB8.1	**Continuous Internal Evaluation Marks and Minimum CIE Marks:** (a) For Vyavaharika Kannada (Balake Kannada)/Aadalitha Kannada (Samskruthika Kannada) the maximum CIE marks shall be 100. For the award of credit, the minimum CIE marks to be secured shall be 40 % of the maximum marks i.e., 40 marks. (b) For Project work Phase -1 and Technical seminar the maximum CIE marks shall be 100. For the award of credit, the minimum CIE marks to be secured shall be 50 % of the maximum marks i.e., 50 marks.