



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

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(Effective from 2013-2014 batch onwards)

ACADEMIC REGULATIONS FOR MASTER OF TECHNOLOGY (OPTOELECTRONICS AND COMMUNICATIONS)

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SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

Vidyagiri, Prasanthi Nilayam - 515 134 (A.P.)

ACADEMIC REGULATIONS FOR MASTER OF TECHNOLOGY (OPTOELECTRONICS AND COMMUNICATIONS)

ADMISSION CRITERIA

REGULATION - 1 : PROGRAMME OF STUDY

The degree of **Master of Technology in Optoelectronics and Communications** is a **four semester full-time course**. The duration of each semester is about 16 to 18 weeks.

REGULATION - 2 : ADMISSION INTO M.Tech. PROGRAMME

- a) i) Candidates applying for M.Tech. (Optoelectronics and Communications) should have a consistently good academic record having secured a first class (60% aggregate), both at the degree level and M.Sc.(Physics)/B.E./B.Tech. levels of examination. English as the medium of Instruction is preferred. Candidates belonging to Scheduled Castes / Scheduled Tribes are entitled to a relaxation of 5% marks.
- ii) Candidates applying for Admission Test need not wait for the announcement of their final results or for the arrival of final year/semester marks statements of the qualifying examination, but can apply on the basis of their previous academic record. In such cases, the eligibility will be assessed on whether the candidate has secured a first class (60% and above) in the previous years/semesters pending the final year/semester results of their qualifying examination as in a(i) above. They should have taken their final year qualifying examination before the date of admission test.
- b) Candidates are selected for admission on the basis of their performance in an Admission Test followed by technical viva and an interview.
- c) On being selected for admission, each candidate will have to be found medically fit by the Institute's Medical Officer on Medical Examination.
- d) Admission to M.Tech. Programme stands confirmed subject to candidates satisfying Regulation-2a(i) above, medically found fit, submitting of original marks card, degree certificates and other certificates as required by the Institute within one month from the date of Admission, failing which his/her admission stands automatically cancelled.

SCHEME OF INSTRUCTION

REGULATION - 3 : COURSE STRUCTURE

A) ACADEMICS:

The course structure of M.Tech. Programme will consist of the following:

- a) **Core courses and Elective courses:** There will be six core courses and six elective courses in all for the programme.
- b) **Viva-Voce:** There will be Viva-voce for one credit having 50 marks in each of the I, and II semesters.
- c) **Comprehensive Viva-Voce:** There will be a Comprehensive Viva-Voce at the end of the III Semester to test the subject knowledge. It is of internal evaluation assigned with two credits.
- d) **Project Work, Interim Review and Viva-Voce:** There will be a project with a total of 12 credits commencing in the third semester and spreading across 2 semesters for a total of 400 marks. The evaluation of the project work will be based on three components. Firstly there will be an interim project review component of 50 marks at the end of 3rd semester, then project viva-voce component having 100 marks at the end of 4th Semester and an internal-external double evaluation component of the project report for 250 marks.

Note: Details of the papers Semester-wise with Scheme of Evaluation are given in Annexure-4.

B) INTEGRAL ITEMS:

The structure of Integral Items would be as follows:

1. Participation in Yogasanas, Games and Sports
2. Participation in Morning Prayer and Meditation Sessions
3. Attendance at Universal Prayer and Readings on Unity of Religions
4. Attendance at Classes
5. Participation in Social Work / Self-Reliance Programme

Note-1: The 'Integral Items' referring to the above co-curricular activities that form part of the Sri Sathya Sai Values-Based Integral Education System, would complement the academics component, catering to the physical, mental, intellectual, psychological and spiritual domains for holistic development of students personality.

Note-2: All the five Integral Items are applicable in each of the four semesters.

REGULATION - 4 : CREDIT RATING OF M.Tech. COURSE

Each course carries a credit value relating to the weekly work-load for each semester. One credit is assigned to one lecture hour per week throughout a semester. The total credits for the various subjects and maximum marks for them from the first to the four semesters will be 64 and 2200 respectively.

Note: One laboratory credit is a minimum of two hours of laboratory work per week.

SCHEME OF EVALUATION

REGULATION - 5: EVALUATION MODES AND THEIR RELATIVE WEIGHTAGES:

The Evaluation Scheme will have two modes viz., one, **Continuous Internal Evaluation (CIE)** across the semester and two, **End Semester Examinations (ESE)**, at the end of the semester and, the students are graded, combining the marks in CIE and ESE on the weightage distribution shown below:

WEIGHTAGE DISTRIBUTION CIE(I) : ESE(E) GRADING

Programme	Semester	CIE Weightage (I)	ESE Weightage (E)
M.Tech.(Optoelectronics and Communications) Programmes	I, II, III and IV	50%	50%

REGULATION – 6: CONTINUOUS INTERNAL EVALUATION (CIE)

A) ACADEMICS:

A-I) Theory Papers/ Courses:

CIE Scheme for Theory papers/courses will consist of various components such as of mid-semester test, assignment, quiz, oral test, seminar, viva-voce, case study, surprise test, etc., to be examined by the faculty members teaching the papers/courses.

Note: The exact components of CIE applicable to each course/paper will be notified from time to time by each department.

A-II) Practicals papers/courses (Laboratory work):

There will be only **Continuous Internal Evaluation** of the performance of the students in **Practical papers/courses and Laboratory work**, to be evaluated by the faculty members teaching the same, under series of Evaluation (**SE**)

consisting of various tests, experiments, records, viva, etc. across the semester and a Summative Test (**ST**) at the close of the semester.

Note: **CIE Scheme as applicable** from time to time for Theory and Practical papers/courses are given in Annexure-2.

II. Practicals (Laboratory work):

There will be **only Continuous Internal Evaluation** of the performance of the students in **practicals and laboratory work**.

B) INTEGRAL ITEMS:

All the five Integral Items are evaluated under CIE, as per the 'Guidelines for Evaluation of Integral Items' given in Annexure-3.

REGULATION - 7: END SEMESTER EXAMINATION (ESE)

- a) There will be an end-semester examination (ESE) at the end of each semester.
- b) The End Semester Examination question-papers will be set and evaluation done by External Examiners or by the faculty members of the Institute.
- c) There will be double-valuation normally one internal and the other is external examiner, or both internal or both external depending on the circumstances, except for the papers designated as 'I'.

Note-1: Question papers for the papers carrying 3 credits and above, are to be set for 100 marks and for a duration of 3 hours, and, the papers of 1 or 2 credits are to be set for 50 marks and 1½ hours duration.

Note-2: The Scheme of Instruction and Evaluation, semester-wise consisting various details relating to paper code, title of the papers, credits, mode of evaluation, etc. for all Postgraduate programmes are given in Annexures-4.

REGULATION - 8: PROJECT and VIVA VOCE

- a) There will be a **Viva voce** at the **end of first and second semesters for 50 marks each and Comprehensive Viva voce at the end of third Semester carrying 100 marks**. These Viva-Voce would be conducted by a **Board of Examiners** consisting of the **Head of the Department and the Faculty Members of the department**.
- b) There will be Project Interim Review at the end of third semester. Every student shall submit a Project Interim Review report on the Project Work at the end of the 3rd semester indicating the progress made (the report to include progress of the project, Literature review etc.). The

report will be evaluated for 50 marks and sent to the Controller of Examinations.

For the group projects the number of students shall not exceed 3. The evaluation of the project report is common for all the students of the group, while the preliminary report evaluation and Viva-voce would be conducted individually.

- c) There will be a **Project Viva voce** at the **completion of the project work** in the fourth semester. It will be conducted by a **Board of Examiners** consisting of the **Head of the Department, the Project Guide, one or Two Senior Faculty Members of the Department and an External Examiner.**
- d) The **Project Viva voce** will carry **100 marks out of the total 350 marks** allotted for the Project Work in the fourth semester.
- e) If a student fails to complete the Project Work satisfactorily, he will be asked to redo it, along with the next batch of students.

REGULATION – 9A: REQUIREMENT OF MINIMUM CLASS ATTENDANCE IN ACADEMICS FOR BEING ELIGIBLE TO SIT FOR END SEMESTER EXAMINATIONS

- a) i) A student has to put in a minimum of 85% Class Attendance in each course/paper of study.
 - ii) Attendance here denotes the actual number of days that a student has attended the class.
 - iii) Attendance is calculated from the commencement of the Semester to 10 days before the last working day (prior to the commencement of study-leave), giving the benefit of attendance for the last ten days of the Semester.
- b) A student, not allowed to take the End-Semester Examination for want of class-attendance, will not be permitted to move to the next Semester. However, he/she would be permitted to repeat the term in the course/paper and sit for Examination after registering the required attendance during the next academic year.

c) Condonation of Shortage of Class Attendance

“Notwithstanding what is stated above, the Vice-Chancellor may, in extraordinary cases, consider condonation of shortfall in class attendance on the basis of merits of each case”.

Note: 'Repeating the term' means:-

- i) The marks obtained hitherto in CIE in the failed paper stands cancelled and the student has to take the CIE test afresh.
- ii) Whenever there is a change in the syllabus arising out of a new Scheme or otherwise the student may be asked to 'repeat' in the equivalent paper(s).

REGULATION – 9B: OPTIMAL NUMERIC POINT (ONP) REQUIREMENT IN INTEGRAL ITEMS FOR BEING ELIGIBLE TO SIT FOR END SEMESTER EXAMINATIONS:

- a) i) A student is required to earn 'Optimal Numeric Point' (ONP), as prescribed hereunder against each of the Integral Items:

Integral Items	ONP
1. Participation in Yogasanas, Games and Sports	7
2. Participation in Morning Prayer and Meditation Sessions	7
3. Attendance at Universal Prayer and Readings on Unity of Religions	9
4. Attendance at Classes	9
5. Participation in Social Work / Self-Reliance Programme	7

- ii) Numeric Points in Integral Items are computed as given in 'Guidelines for Evaluation of Integral Items' (Annexure-3) which will be reckoned 10 days before the last working day (prior to the commencement of study-leave) of the semester.
- b) A student not allowed to take End Semester Examinations for want of ONP in one or more of the Integral Items, will not be permitted to continue his/her studies further in the Institute.

c) Condonation of Shortfall of ONP in Integral Items:

"Notwithstanding what is stated above, the Vice-Chancellor may, in extraordinary cases, consider condonation of shortfall in ONP, on the basis of merits of each case".

REGULATION - 10:

Students will not be allowed to keep terms simultaneously for two different courses of study.

GRADING SYSTEM

REGULATION - 11: TEN-POINT SCALE GRADING

A) ACADEMICS:

- i) The student's placement in the Ten-Point Scale Grading will reflect his/her cumulative academics performance during the two years of Postgraduate study.
- ii) The **Cumulative Grade** will be awarded on the aggregate of the Combined Numeric Points in the papers during the four Semesters of the Postgraduate study.

B) INTEGRAL ITEMS:

Cumulative Grade will be awarded for the Integral Items in the Ten-Point Scale Grading on the aggregate of Numeric Points (NP) of all the Integral Items during the four semesters of Postgraduate study.

The **Integral Items** are:

1. Participation in Yogasanas, Games and Sports
2. Participation in Morning Prayer and Meditation Sessions
3. Attendance at Universal Prayer and Readings on Unity of Religions
4. Attendance at Classes
5. Participation in Social Work / Self-Reliance Programme

- Note:**
- i) Exemption from participation in the Integral Items may be given on valid medical grounds.
 - ii) Students who have been permitted to stay outside the Hostel are exempted from Yogasanas and attendance at the Morning Prayer and Meditation Sessions.
 - iii) Students should earn a minimum Numeric Point (NP) of **'4'** for a **Pass** in each of the Integral Items.
 - iv) Evaluation Scheme for Integral Items is given in Annexure-3.

REGULATION - 12: CLASSIFICATION AND CONVERSION

- A)** The following are the **Conversion Tables** for converting Marks into Numeric Points (NP), Grade Point Average (GPA) / Cumulative Grade Point Average (CGPA) into Letter Grades (LG) and its Qualitative Assessment (QA), for Academics as well as Integral Items:

12A-i) For converting Marks into Numeric Points (NP)

Conversion Table I-A:

Marks (%)	Numeric Point (NP)
Less than 50	FAILS
50 – 54	5
55 – 64	6
65 – 74	7
75 – 84	8
85 – 94	9
95 – 99	9.5
100	10

12A-ii) For converting GPA/CGPA into Letter Grades (LG) and its Qualitative Assessment (QA)

Conversion Table II-A

For M.Tech.(Optoelectronics and Communications) Programme

GPA/CGPA Range	Letter Grade (LG)	Qualitative Assessment (QA)
4.0 - 4.9	C	Average
5.0 - 5.9	B	Fair
6.0 - 6.9	A	Good
7.0 - 7.9	A+	Very Good
8.0 - 8.9	O	Distinction
9.0 – 10.0	O+	Outstanding

Note: Conversion Tables are to be read in tandem with other relevant clauses of Regulations such as 'Passing Minimum', etc.

12B ACADEMICS:

12B-i) Calculation of GPA / CGPA: ACADEMICS:

i-1) Credit (CR): A single credit for a paper represents a lecture of one hour per week or a laboratory / workshop period of 2 / 3 hours per week.

i-2) Combined Numeric Points (COMB-NP): The Combined Marks of a student for a paper shall be computed as the weighted average of

the Continuous Internal Evaluation (CIE) Marks and the End Semester Examination (ESE) Marks, based on the prescribed weightage ratio. The Combined Marks is then converted to the Combined Numeric Points based on Conversion Table I-A.

i-3) Grade Point Average (GPA) of a student in a Semester: The GPA of a student in a semester shall be computed as follows:

- a) In a set of papers for a given Semester, the Credit(s) of each paper is multiplied by the corresponding Combined Numeric Points (COMB-NP).
- b) "Combined Numeric Points" for all the papers in a given Semester are totalled to give the Total "Combined Numeric Points".
- c) GPA is computed by dividing the Total "Combined Numeric Points" by the total of Credits of all papers completed in the Semester.

i-4) Grade of a student in a Semester: The Grade of a student in a Semester shall be awarded with reference to the Conversion Table II-A for the GPA obtained by the student.

i-5) Cumulative Grade Point Average (CGPA) and Cumulative Grade of a student in a Programme: The Cumulative Grade Point Average (CGPA) and Cumulative Grade of a student in a Programme shall be computed/awarded in the same way as the Grade Point Average (GPA) and Semester Grade respectively.

12C INTEGRAL ITEMS:

12C-i) Calculation of CGPA:

- a) **Grade Points for Integral Items** shall be awarded in the form of Numeric Points (NP), as in the case of Academics (Conversion Table-IA); and the alphabet "X" represents "Exemption" in the concerned Integral Item.
- b) **Cumulative Grade Point Average (CGPA) of a student in Integral Items** shall be computed by dividing the total of Numeric Points (NP) awarded, by the number of Integral Items taken into account, leaving those with grade "X" (exemption), if any, for the entire Programme.
- c) **Cumulative Grade of a student in Integral Items** shall be awarded with reference to the Conversion Table II-A.

Note: Students should earn a minimum Numeric Point (NP) of '4' for a Pass in each of the Integral Items.

REGULATION - 13: PASSING MINIMUM IN ACADEMICS

Passing Minimum: In a paper, a **Numeric Point of '5'** (a minimum of 50% marks) in the End Semester Examination (**ESE-NP**); a **Combined Numeric Point of '5'** (a minimum of 50% marks) (**COMB-NP**); and a Minimum of **Grade 'B'** in a **Semester**.

REGULATION - 14: GRADE CARDS

- a) A Grade-Card will be issued at the end of each Semester.
- b) The Grade-Cards shall contain three separate entries, one for the Numeric points of Continuous Internal Evaluation (CIE-NP), second for the Numeric Point of End-Semester Examination (ESE-NP) and the third for Combined Numeric Point (COMB-NP).
- c) The Grade Cards will also show separately the Numeric Points (NP) obtained by the students in each of the Integral Items.

Note: A consolidated grade card will be issued at the end of the Postgraduate programme, showing the Combined Numeric Point (COMB-NP) in each paper semester-wise, and, CGPA, CG in Academics as well as Integral Items.

PROMOTION AND AWARD OF DEGREES

REGULATION - 15: PROMOTION

A student should have passed in all the papers and obtained a minimum Grade 'B' for Promotion from one semester to next semester.

However, a student would be permitted to go from one semester to the next semester if he has not failed in more than two theory papers subject to his passing in both papers and getting a Grade 'B' for regularising the promotion.

REGULATION - 16: SUPPLEMENTARY EXAMINATION:

- a) A student who fails or is absent in the End Semester Examinations, has to apply for permission in the prescribed application form to take '**Supplementary Examination**'. Permission may be granted on the basis of the genuineness of the reason given in the application. The same holds good for the courses evaluated entirely under CIE or ESE (Mode of Evaluation 'I' or 'E').

- b) A student is permitted to take 'Supplementary Examination' subject to the following:
- (i) He will not be eligible to take 'Supplementary Examination' in any single paper or subject more than once.
 - (ii) If he fails in 'Supplementary Examination', he will be asked to repeat the semester or discontinue from the course.
- c) Notwithstanding anything stated above, the Vice-Chancellor may, on the basis of the merits of each case, grant a student an extra chance by way of Supplementary examination in any paper.

Note: 'Repeating the term' means:-

- i) The marks obtained hitherto in CIE in the failed paper stands cancelled and the student has to take the CIE tests afresh.
- ii) Whenever there is a change in the Syllabus arising out of a new Scheme or otherwise the student may be asked to 'repeat' in the equivalent paper(s).

REGULATION – 17: **WITHDRAWAL FROM THE PROGRAMME**

At the end of the semester the student will be asked to withdraw from the Programme in the following cases:

- i) Failure in more than 2 Theory Papers in a semester
- ii) Failure in the supplementary examination

REGULATION - 18: **AWARD OF DEGREES**

A student of the M.Tech. course would be evaluated on the basis of his achievement during the three Semesters including the Project work and Viva-Voce.

REGULATIONS - 19:

Any Research Report, Dissertation, Tour Report and Project Report submitted by the students during the Course of study, will become the property of the Institute.

REGULATION - 20:

The Vice-Chancellor may use his discretion in terms of interpreting and/or modifying any of the above clauses to meet the changing requirements.

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ANNEXURE-1

INTEGRAL ITEMS

The 'Integral Items' referring to the co-curricular activities mentioned below that form part of the Sri Sathya Sai Values-Based Integral Education System, would complement the academics component, catering to the physical, mental, intellectual, psychological and spiritual domains for holistic development of students personality.

Each item carries 50 marks per Semester and the assessment is done for all the four Semesters for M.Tech.(Optoelectronics and Communications). The details of marks allotted for different Integral Items are given below:

	Integral Items	Per Semester	M.Tech.
1.	Yogasanas, Games and Sports	50	200
2.	Attendance at Morning Prayer and Meditation Sessions	50	200
3.	Attendance at Universal Prayer and Readings on 'Unity of Religions'	50	200
4.	Attendance at Classes	50	200
5.	Social Work / Self-Reliance Programme	50	200
		—————	—————
		250	1000
		—————	—————

Each student spends about 12 hours a month on Self-Reliance Programme or Social Work and 12 hours a month on Sports, Yogasanas and Games.

Detailed procedures are laid down for evaluating the performance of students in Social-Work and Self-Reliance Programme and other items.

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**M.TECH.(OPTOELECTRONICS AND COMMUNICATIONS)
PROGRAMME**

CIE SCHEME

**(APPLICABLE FROM JUNE 2011, CONCURRENTLY
FOR ALL BATCHES viz., I, and II YEARS)**

I – THEORY PAPERS

(CIE : ESE weightage = 50% : 50% for all departments)

Department of Physics M.Tech(Optoelectronics and Communications)			
Item	Marks Allotted	Time Slot Odd Semester	Time Slot Even Semester
CIE- I	25	July - Week-I	Dec - Week-2
CIE - II	25	Aug - Week-I	Feb - Week-I
CIE - III	25	Sep - Week-I	March - Week-I
Assignment / Seminar	25	Across Semester	Across Semester
Total Marks	100		

II – ALL PRACTICAL PAPERS

SE	ST
50%	50% (Comprehensive Viva-Voce with a minimal Practical Test)

SE: A Series of Evaluation (SE) consisting of various tests, experiments, records, viva, etc. across the semester.

ST: A Summative Test (ST) at the close of the semester.

Note: However, CIE marks would be shown in the marklist submitted by the teacher concerned, as only one figure merging both, the Series of Evaluation (SE) and the Summative Test (ST) Marks in the ratio said above.

Note:

1) Only Continuous Internal Evaluation(CIE) for M.Tech. Practicals: There will be only Continuous Internal Evaluation (CIE) and no End Semester Examinations for all Practicals..

2) Components of CIE: Though CIE mode remains to be 100% for Practicals, two broad components form the entire CIE scheme, viz., One – SE: A Series of Evaluation(SE) consisting of various tests, experiments, records, viva, etc. across the semester and Two – ST: A Summative Test(ST) at the close of the semester. The ratio of these two components of CIE, viz., SE : ST as emerged in the meeting are as follows:

$$\frac{\text{SE}}{50\%} \quad \frac{\text{ST}}{50\%} \text{ (Practicals and a Comprehensive Viva-voce)}$$

Note: i) However, CIE marks would be shown as only one figure merging both, the Series of Evaluation (SE) and the Summative Test (ST) Marks in the ratio said above.

ii) Further, the weightage ratio of CIE components could be finally decided by each of the departments depending on their suitability, in case of PG programmes, and uniformity across the campuses is maintained.

3) Summative Test is mandatory: Summative Test is mandatory and it forms part of all CIE practicals. There will be two examiners, one, the teacher who taught the paper in the current semester and two, another suitable member of the department in the campus, or, from other campus, or a visiting faculty.

4) Maintenance of CIE Record: As a part of CIE, record of performance of the students, i.e., 'Record Sheet' would be maintained by the teacher concerned in the prescribed format. The format would indicate all the sub-components under each of the two Main Components, viz., SE and ST. The Record sheet, with all enclosures should be duly signed and submitted to HOD at the time of conduct of Summative Test. HOD will arrange for the scrutiny of the same by the examiners of Summative Test for certification.

5) Submission of Markl ist: One mark list for each of the practical papers will be submitted to the Controller of Examinations at the end of the semester as a part of CIE. The final marks would be arrived at using the prescribed weightage ratio between two components of CIE, as enunciated in point no. 2. Also, along with each of the mark lists, a photocopy of the Record Sheet as certified during the Summative Test, vide point no. 4 above, be enclosed for the record of the Institute.

6) Lab Sessions/Practicals Manual: Each department will have with its own 'Lab Sessions/Practicals' Manuals to be submitted to Registrar for approval and implementation from time to time. The manual shall contain a List of experiments with Guidelines for conducting experiments, evaluation procedures, maintenance of CIE records, submission of marklists, etc.

Note: i) This manual is subject to annual review.

ii) This document evolved on best practices as drawn from the expertise and experience of senior faculty members, would serve as a standard of reference and also the guidelines for new recruits.

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SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)
Vidyagiri, Prasanthi Nilayam – 515 134
Anantapur District, Andhra Pradesh, India

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INTEGRAL ITEMS**Guidelines for Evaluation of Integral Items using Ten-Point Scale**

Academic Year: _____ Semester No. _____

Consolidated Assessment Sheet - A**Integral Item-1: Participation in Yogasanas, Games and Sports**

Sl. No.	Regd. No.	Components (Evaluate each component out of 10 marks)						Total Marks out of 70	Percentage = TM / 0.7	Numeric Point (NP) *	Remarks	
		Punctuality	Learning of Skills	Practice of Skills	Fair Play	Discipline	Self-Control					Team Work
		C1	C2	C3	C4	C5	C6					C7

Consolidated Assessment Sheet - B**Integral Item-5: Participation in Social Work / Self-Reliance Programme**

Sl. No.	Regd. No.	Components (Evaluate each component Out of 10 marks)					Total Marks out of 50	Percentage = TM / 0.5	Numeric Point (NP) *	Remarks
		Punctuality	Regularity & Courtesy	Enthusiasm & Mastering Skills	Initiative, Willingness & Promptness in Serving	Efficiency & Quantum of Service				
		C1	C2	C3	C4	C5				

Consolidated Assessment Sheet - C

Integral Item – 2: Participation in Morning Prayer and Meditation Sessions

Integral Item – 3: Attendance at Universal Prayer and Readings on Unity of Religions

Integral Item – 4: Attendance at the Classes

Sl.No.	Regd. No.	Integral Item - 2		Integral Item - 3		Integral Item - 4		Remarks
		%	Numeric Point (NP) *	%	Numeric Point (NP) *	%	Numeric Point (NP) *	

* Refer to Conversion table on the next page.

1st June, 2013

Annexure – 3 Contd..

List of Integral Items: There are five Integral Items that are evaluated along with the academic curricula, as part of the evaluation system in the Institute. They are:

1. Participation in Yogasanas, Games and Sports
2. Participation in Morning Prayer and Meditation Sessions
3. Attendance at Universal Prayer and Readings on Unity of Religions
4. Attendance at Classes
5. Participation in Social Work / Self-Reliance Programme.

All Integral Items from 1 to 5 are evaluated on a percentage scale grading as per the 'Guidelines' in reference to the Consolidated Assessment Sheets A, B and C.

- a) The Percentage Marks to Numeric Point (NP) conversion is given below in Table-I-A.
- b) Passing Minimum in each of the Integral Items: '4' Numeric Point (NP)
- c) Cumulative Grade Point Average (CGPA) of a student in Integral Items is computed by dividing the total of Numeric Points (NP) awarded, by the number of Integral Items taken into account, leaving those with grade "X" (exemption), if any, for the entire Programme.
- d) Cumulative Grade of a student in Integral Items is awarded with reference to the Conversion Table II-A.

Table – I-A	
For Converting Percentage Marks to Numeric Point	
Marks (%)	Numeric Point (NP)
Less than 40	FAILS
40 – 44	4
45 – 54	5
55 – 64	6
65 – 74	7
75 – 84	8
85 – 94	9
95 – 99	9.5
100	10

Conversion Table – II-A		
For converting CGPA into Letter Grades (LG) and its Qualitative Assessment (QA)		
GPA/CGPA Range	Letter Grade (LG)	Qualitative Assessment (QA)
4.0 - 4.9	C	Average
5.0 - 5.9	B	Fair
6.0 - 6.9	A	Good
7.0 - 7.9	A+	Very Good
8.0 - 8.9	O	Distinction
9.0 – 10.0	O+	Outstanding

Optimal Numeric Point (ONP) Requirement in Integral Items

Integral Items	ONP
1. Participation in Yogasanas, Games and Sports	7
2. Participation in Morning Prayer and Meditation Sessions	7
3. Attendance at Universal Prayer and Readings on Unity of Religions	9
4. Attendance at Classes	9
5. Participation in Social Work / Self-Reliance Programme	7

Numeric Point awarded in each of the Integral Items for a candidate, in a semester, is indicated in her/his Grade Card.

Annexure-4

M.Tech.(OPTOELECTRONICS AND COMMUNICATIONS)
SCHEME OF INSTRUCTION AND EVALUATION
(EFFECTIVE FROM THE BATCH 2013-14 ONWARDS)

Paper Code	Title of the Paper	Theory / Practical	Credits	Hours	Mode of Evaluation	Maximum Marks
FIRST SEMESTER						
MTOC-101	Fiber Optics Components	T	3	3	IE	100
MTOC-102	Optical communication systems	T	3	3	IE	100
MTOC-103	Optoelectronics	T	3	3	IE	100
MTOC-104	Elective-I	T	3	3	IE	100
MTOC-105	Elective-II	T	3	3	IE	100
MTOC-106	Optoelectronics Lab	P	3	9	I	100
MTOC-107	Software Lab-I	P	3	9	I	100
MTOC-108	Viva voce	-	1	-	I	50
SAWR-100N	Awareness Course-1	-	Non-Credit	1	-	--
			(22 credits)	(34 hours)		(750 marks)
SECOND SEMESTER						
MTOC-201	Digital Communication and Information System	T	3	3	IE	100
MTOC-202	Optoelectronic Instrumentation	T	3	3	IE	100
MTOC-203	Optical Networks	T	3	3	IE	100
MTOC-204	Elective-III	T	3	3	IE	100
MTOC-205	Elective-IV	T	3	3	IE	100
MTOC-206	Network Lab	P	3	9	I	100
MTOC-207	Software Lab-II	P	3	9	I	100
MTOC-208	Viva voce	-	1	-	I	50
SAWR-200N	Awareness Course-2	-	Non-Credit	1	-	--
			(22 credits)	(33 hours)		(750 marks)
THIRD SEMESTER						
MTOC-301	Elective-V	T	3	3	IE	100
MTOC-302	Elective-VI	T	3	3	IE	100
MTOC-303	Comprehensive Viva voce	-	2	-	I	100
MTOC-401	Project Interim Review**	-	-	20	I	50**
			(8 credits)	(26 hours)		(350 marks)
FOURTH SEMESTER						
MTOC-401	Project and Viva voce***	-	12	28	E	350***
			(12 credits)	(28 hours)		(350 marks)
TOTAL:			(64 credits)	(121 hours)		(2200 marks)

IE -- indicates Continuous Internal Evaluation (CIE) & End Semester Examination (ESE)
I -- Indicates only Continuous Internal Evaluation
E -- indicate only End Semester Examination

** The Project Work topic would be finalized by the end of the second semester, and the Project Work starts thereafter, continues in the third semester and gets completed in the fourth semester.

*** Total marks for the Project Work would be 400 marks, which would include 50 marks for the review of the Preliminary Report submitted by the student at the end of the third semester (please see **) + 100 marks for the Project Viva voce conducted at the end of the 4th semester + 250 marks for the double evaluation of the Project Report at the end of the fourth semester.

Elective Courses

All electives are of three credits. A student will be allowed to take any of the electives in the following categories of electives. The Lab based electives will be internal courses and hence there will no end semester examination for these electives. For these courses, apart from CIE there will be a summative test for 100 marks at the end of the semester conducted by the course Coordinator. The students can take the guidance of course Coordinator / HOD for choosing the best possible elective. Apart from the list of electives given below, the student can choose electives from the relevant courses offered by other departments of the campus. The HODs / Course coordinators will take the final decision to offer an elective based on the load of the faculty members and give permission.

A. PROGRAM RELATED ELECTIVES:

- PE1: Computer Networks
- PE2: Principles of Photonics
- PE3: Wireless and Mobile Networks
- PE4: Network security and Management
- PE5: Broadband communications
- PE6: Fourier Optics and Optical Engineering
- PE7: Signal Processing
- PE8: Optical computing
- PE9: Principles of Advanced Networks
- PE10: Integrated Optics

B. OPEN ELECTIVES:

- OE1: Advanced Computational Techniques
- OE2: Introduction to Computer Design and Operating Systems
- OE3: Data Structures and Algorithms
- OE4: Geospatial Information Systems (GIS)
- OE5: Digital Image Processing
- OE6: Modeling and Simulation of Digital systems
- OE7: Embedded systems
- OE8: VLSI Systems
- OE9: Microprocessors and Microcontrollers
- OE10: ASIC Design
- OE11: Design and Analysis of Algorithms
- OE12: Distributed Systems
- OE13: Software Engineering
- OE14: Multi-core Computing
- OE15: Introduction to Virtualization Technologies
- OE16: Reliability, Availability and Serviceability of Systems
- OE 17: Microelectronics

C. LAB BASED ELECTIVES:

- LE1: Advanced C-programming
- LE2: Unix Network Programming