Item 31.10 To decide relaxation in prescribed fee for period of absence for UG & PG programmes of the Institute.

As per academic regulations for UG & PG programmes, the students are charged prescribed fee for the period of absence. The period of absence can be with or without permission from the Institute Authorities.

Mr. Ujjawal Shashi Kumar, Roll No. 213008, a student of B.Tech. Computer Engineering was allowed to drop his 7th & 8th semester in 2016 and 2017 by the then Dean (Academic) vide notification no. Acad./2016/510 on ground of health issues and below academic performance in the previous years. The student was admitted under Direct Admission Students from Abroad (DASA) category. Mr. Ujjwal Shashi Kumar requested to register in 7th semester in academic session 2017-18. He was allowed by the director under Clauses 5.1 & 5.2 on academic regulations of UG programmes with a condition that fee for the period of absence may be decided in the next Senate meeting. Accordingly, office order was issued and office order is enclosed from (pages **106** to **112**).

Mr. Deepak Kumar Meena, Roll No. 1130502, B.Tech. student of Mechanical Engineering also requested for registration in 7th semester in academic session 2017-18 as he did not register in 7th semester during session 2016-17. He has admitted that due to some circumstances and large number of re-appears in previous semesters, he could not study in 7th semester in 2016-17. He was also allowed by the Director under clauses 5.0 and 6.0 of academic regulations for UG programme with a penalty of ₹ 5000/- with a condition that matter of fee relaxation for period of absence may be taken up in the next Senate meeting. He was also issued office order in this regard. The approval and office order in respect of Mr. Deepak Kumar Meena are enclosed from (pages **113** to **117**).

Already in the 25th Senate meeting vide item no. 25.17, the case of M.Tech. programme was discussed & decided as under (pages **118** to **121**):

1. The students may be allowed to accept employment after 30th June in the 4th semester.
2. The students may be allowed to register for dissertation in subsequent semester (upto the maximum duration of M.Tech. degree i.e. 5 years) by depositing nominal registration fee of Rs. 1,000/- (one thousand only) per semester until the dissertation is submitted. During the 5th semester onwards a student may be allowed to continue his dissertation work while in employment under the supervision of his in the institute.
3. Such students who submit their dissertation after 30th June in 4th semester will not be entitled for any award/medal on the basis of their CGPA. However, these

students will be awarded grades for dissertation following normal evaluation procedure.
The Chairman, Senate approved this process for M.Tech. batches 2012 onwards.

In view of above and students facing such issues, it is proposed to give fee relaxation to the students of UG & PG programme for the period of absence whether it is with permission or without permission.

The Senate may kindly decide on relaxation in prescribed fee for the period of absence, for all UG & PG programmes.

OFFICE OF THE DEAN (ACADEMIC)
NATIONAL INSTITUTE OF TECHNOLOGY KURUKSHETRA

No. Acad./2016/ 510 Dated: 19.8.2016

Mr. Ujwal Sasikumar, roll no. 2130008, B.Tech. Computer Engineering admitted through DASA Scheme has requested to allow him to drop studies during the session 2016-17 on grounds of health issues and below average academic performance in the previous year. In light of his request, written and verbal, he is permitted to cancel his registration for the present semester. However, he is permitted to appear for his previous reappear papers as per regulations of the Institute.

Decision regarding the refund/adjustment of his fees that he has paid for the present semester will be made after due approval from the competent authority.

19.08.16
Dean (Academic)

Dy. Registrar (Acad.)

Copy to:

1. HOD, Computer Engineering
2. DR (Accounts)
3. Concerned student

OFFICE OF THE DEAN (ACADEMIC)
NATIONAL INSTITUTE OF TECHNOLOGY KURUKSHETRA

No. Acad./2017/ Dated: 12.01.2017

Mr. Ujwal Sasikumar, roll no. 2130008, B.Tech. Computer Engineering admitted through DASA Scheme has requested to allow him to drop studies during the session ~~2017-18~~ Even Semester (2016-17) on grounds of health issues and below average academic performance in the previous year. In light of his request, written and verbal, he is permitted to cancel his registration for the present semester. However, he is permitted to appear for his previous reappear papers as per regulations of the Institute.

Decision regarding the refund/adjustment of his fees that he has paid for the present semester will be made after due approval from the competent authority.

12.01.17
Dean (Academic)

Dy. Registrar (Acad.)

GICS/Vikram
Plz. file in the DF of the concerned Student SD 16/1/17

Copy to:

1. HOD, Computer Engineering
2. DR (Accounts)
3. Concerned student

Mr. Ujwal Sasikumar, Roll no. 2130006, student of B.Tech (Computer Engineering) requested for registration in 7th semester 4th year in odd semester of academic session 2016-17 vide his application dated 06.07.2017. As he allowed by the Dean (Academic) for year drop during academic session 2016-17 on grounds of health issues and below average academic performance in the previous year.

In view of above, it is proposed that his registration for 7th semester 4th year may be accepted and he may be allowed to study 7th semester.

Submitted for kind approval, please.

Deputy Registrar (Academic)

4/8/17

Dean (Academic)

May it be considered under clause 5.1 | 5.2 of the academic regulations. Fee for the period of absence may be decided as per your advise. Submitted for your kind approval pl.

4/8/17

Director

8/8/17

matter related to fee may be put up in Senate as per Academic Rule 5.1/5

8/8/17

Dean (Acad)

14.8.2017

ma. subject to condition of fee as above.

DR(Acad)

professional course(s). This concession of additional semester(s) for improvement will be counted within maximum duration permissible for the programme.

Note :

The Percentage of marks obtained by a student if so required, can be calculated as =CGPA multiplied by 9.00.

4.3 At the end of each semester (i.e. after End Semester Examination), students will be supplied a Grade Card indicating the Grades secured in each course and up to date CGPA.

4.4 A Student is deemed to have completed the requirements for graduation and is eligible for the award of degree if :

(a) he/she has satisfied all the academic requirements as per the regulations.

(b) he/she has paid all fees due from him/her.

(c) there is no case of indiscipline pending against him/her.

5.0 Absence/Dropping of Semester

5.1 If a student absents form the Insitute with due permission of the Dean Academic due to illness, he/she will be permitted to rejoin provided the period of absence does not exceed one semester. If the period of absence is more than one semester or the absence is for reasons other than illness, the case will be referred to the Director by Dean Academic with his/her recommendations.

The student will, however, be charged the prescribed fee even for the period of absence.

In no case, the total period of absence shall exceed two semester during student's stay in the Insitute. In that eventuality, the student's name shall be struck off from the rolls of the Institute.

5.2 Notwithstanding the above the Senate may at its discretion, on appeal, relax any of the conditions of Clause 5. Its decision shall be final and binding.

6.0 Re-admission/Duration

6.1 In case a student absents from the Insitute without prior permission, he/she may be permitted to join back with the permission of the Director on

payment of penalty of **Rs. 5000/- in addition to the prescribed fee for the period of absence.**

In no case, the period of unauthorized absence will exceed one semester. If the period of unauthorized absence exceeds one semester, the student's name will be struck off from the rolls of the Insitute.

The maximum period in which a student must qualify for the award of B.Tech degree will be eight years, failing which a student will not be allowed to countinue his/her studies for B.Tech Degree.

6.2 The gap of one/two semesters missed by the student(s), as the case may be, will count towards the total durations of the Programme permissible under the Regulations.

(d) Schedule A-II

ACADEMIC REGULATIONS FOR POST-GRADUALTE PROGRAMMES

1.0 Admissions

1.1 The admissions for the regular postgraduate programmes will be open to candidates admitted to the privileges of the Insitute. The duration of the course will be two years (Four semesters) for M.Tech. programmes. Each academic year will be divided into two semester, each of 16-18 weeks duration.

1.2 The admission to the first semester will be open to the candidates on merit and as per rules given in the Information Brochure. The Candidates must have passed the qualifying examination with minimum 60% marks from University recognized by the Institute in the disciplines prescribed by the Senate. **GATE qualified Candidates shall be considered for Admission in M.Tech. Courses.**

1.3 Relaxation of 5% marks in the eligibility conditions will be allowed to Scheduled Caste/Tribe candidates. In case of special circumstances, the Director in consultation with Chairman of the Deptt. concerned may further relax this condition for these reserved category condidates.

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA -136119

No. Acad/2017/434 **August 14, 2017**

OFFICE ORDER

Mr. **Ujwal Sasikumar**, bearing Roll No. **2130008** of B.Tech. (Computer Engineering) requested for re-registration in 7th semester 4th year in Odd Semester Academic Session 2017-18 as he allowed by the Dean (Academic) for year drop during academic session 2016-17 on grounds of health issues and below average academic performance in the previous year.

In view of his request and the Institute rules applicable in his case, he is allowed to re-register as regular student in 7th semester of B.Tech. (Computer Engineering) in Odd Semester of **2017-18 w.e.f 14.08.2017.** His attendance for 7th semester will be counted w.e.f. 16.08.2017.

The student has to pay institute fee of 7th semester onwards, as applicable for his batch. His name is provisionally included in the roll sheet of 7th semester of B. Tech (Computer Engineering) in **section CO-6**. He has to submit registration form within three days of receipt of this order.

Deputy Registrar (Academic)
14/8/17

Copy to:

1. Mr. Ujwal Sasikumar, (Roll No: - 2130008) 16/8/17
2. Head of the Computer Engg. Department
3. Deputy Registrar (Accounts) 16/8/17
4. Librarian 16/8/17
5. Prof.in-Charge (Academic)
6. Prof.in-Change (Examinations) 16/8/17
7. Dean (Academic) for kind information.

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA -136119

No. Acad./2017/492 **August 21, 2017**

OFFICE ORDER

In continuation to our earlier Officer Order No. Acad./2017/474 dated 14.08.2017. Mr. **Ujwal Sasikumar**, bearing Roll No. **2130008** of B.Tech. (Computer Engineering has to pay institute fee even for the period of absence with permission under clause 5.1/5.2 of academic regulations for UG programme.

The matter of fee relaxation for the period of absence may be taken up in the next Senate meeting for consideration. The decision of the Senate in this regard will be final and binding on all.

The other content of the earlier Office Order will remain same.

Deputy Registrar (Academic)
21/8/17

Copy to:

1. Mr. Ujwal Sasikumar, (Roll No: - 2130008)
2. Head of the Computer Engg. Department
3. Deputy Registrar (Accounts)
4. Librarian
5. Prof.in-Charge (Academic)
6. Prof.in-Change (Examinations)
7. Dean (Academic) for kind information.

Mr. Deepak Kumar Meena, Roll no. 1130502, student of B.Tech (Mechanical Engineering) requested for registration in 7th and 8th semester 4th year in academic session 2017-18 vide his application dated 22.05.2017. As he did not register in 7th and 8th semester academic session 2016-17, his name was removed from the roll-sheet for odd semester 2016-17. He also admitted that due to some circumstances, he could not study in 7th and 8th semester and didn't appear any of the examinations in 7th and 8th semester.

In view of his request, it is proposed that his registration for 7th and 8th semester may be accepted and he may be allowed to study 7th and 8th semester during academic session 2017-18. However, he need not to pay semester fee, as fee paid by him during academic session 2016-17 will be adjusted in academic session 2017-18, however he has to pay Rs. 10,000/- as penalty for not registration in previous year and absence without permission by competent authority.

Submitted for kind approval, please.

Deputy Registrar (Academic)
V Singh for 4/8/17 4/8/17

Dean (Academic)

Relevant rules may be referred before putting it to the Director for approval.

7.08.2017

DR (Academic)
Plz - putup with relevant rules
Supply (Acad) for VKram
7/8/17 7/8/17

Relevant rules enclosed.

DR(Academic) 8/8/17

The student requested to study 8th semester in Jan-2018 but was refused to register in 8th Semester as he studied 7th semester.
As per regulations he has to pay penalty of Rs 5000/- and Prescribed fee for period of absence. He has already paid semester fee of 7th and 8th semester. The copy of the rule is enclosed. 8/8/17

Dean (Acad).

PTO

Approval may please be given to register the candidate/student in 7th Semester subject to following: (Rule 5.0 & 6.0, as attached).

i) Student is required to pay the penalty of Rs 5000/- in addition to the prescribed fee for the period of absence. However, fee to be charged as applicable to this batch.

ii) Matter of fee relaxation for the period of absence may be taken up in the coming/next Senate meeting

10/8/17 — 9.08.2017

Director — 10/8/17

11/8/17

DR (Acad)

12.8.2017

DR (Acad).

Please issue order in this regard. to the student.

Supdt (Acad) — 12/8/17

professional course(s). This concession of additional semester(s) for improvement will be counted within maximum duration permissible for the programme.

Note :

The Percentage of marks obtained by a student if so required, can be calculated as =CGPA multiplied by 9.00.

4.3 At the end of each semester (i.e. after End Semester Examination), students will be supplied a Grade Card indicating the Grades secured in each course and up to date CGPA.

4.4 A Student is deemed to have completed the requirements for graduation and is eligible for the award of degree if :

(a) he/she has satisfied all the academic requirements as per the regulations.

(b) he/she has paid all fees due from him/her.

(c) there is no case of indiscipline pending against him/her.

5.0 Absence/Dropping of Semester

5.1 If a student absents form the Insitute with due permission of **the Dean Academic due** to illness, he/she will be permitted to rejoin provided the period of absence does not exceed one semester. If the period of absence is more than one semester or the absence is for reasons other than illness, the case will be referred to the Director by Dean Academic with his/her recommendations.

The student will, however, be charged the prescribed fee even for the period of absence.

In no case, the total period of absence shall exceed two semester during student's stay in the Insitute. In that eventuality, the student's name shall be struck off from the rolls of the Institute.

5.2 Notwithstanding the above the Senate may at its discretion, on appeal, relax any of the conditions of Clause 5. Its decision shall be final and binding.

6.0 Re-admission/Duration

6.1 In case a student absents from the Insitute without prior permission, he/she may be permitted to join back with the permission of the Director on

payment of penalty of **Rs. 5000/- in addition to the prescribed fee for the period of absence.**

In no case, the period of unauthorized absence will exceed one semester. If the period of unauthorized absence exceeds one semester, the student's name will be struck off from the rolls of the Insitute.

The maximum period in which a student must qualify for the award of B.Tech degree will be eight years, failing which a student will not be allowed to countinue his/her studies for B.Tech Degree

6.2 The gap of one/two semesters missed by the student(s), as the case may be, will count towards the total durations of the Programme permissible under the Regulations.

(d) **Schedule A-II**

ACADEMIC REGULATIONS FOR POST-GRADUALTE PROGRAMMES

1.0 Admissions

1.1 The admissions for the regular postgraduate programmes will be open to condidates admitted to the privileges of the Insitute. The duration of the course will be two years (Four semesters) for M.Tech. programmes. Each academic year will be divided into two semester, each of 16-18 weeks duration.

1.2 The admission to the first semester will be open to the candidates on merit and as per rules given in the Information Brochure. The Candidates must have passed the qualifying examination with minimum 60% marks from University recognized by the Institute in the disciplines prescribed by the Senate. **GATE qualified Candidates shall be considered for Admission in M.Tech. Courses.**

1.3 Relaxation of 5% marks in the eligibility conditions will be allowed to Scheduled Caste/Tribe candidates. In case of special circumstances, the Director in consultation with Chairman of the Deptt. concerned may further relax this condition for these reserved category condidates.

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA -136119

No. Acad./2017/4193 **August 14, 2017**

OFFICE ORDER

Mr. **Deepak Kumar Meena**, bearing Roll No. **1130502** of B.Tech. (Mechanical Engineering) requested for re-registration in 7th semester 4th year in Odd Semester Academic Session 2017-18 as he didn't register in 7th semester 2016-17 and remain absent without permission.

In view of his request and the Institute rules applicable in his case, he is allowed to re-register as regular student in 7th semester of B.Tech. (Mechanical Engineering) in Odd Semester of **2017-18 w.e.f 14.08.2017.** His attendance for 7th semester will be counted w.e.f. 16.08.2017.

The student has to pay institute fee of 7th semester onwards, as applicable for his batch with penalty of ₹ 5000/- for the period of unauthorized absence.

The matter of fee relaxation for the period of absence may be taken up in the next Senate meeting for consideration. The decision of the Senate in this regard will be final and binding on all.

His name is provisionally included in the roll sheet of 7th semester of B. Tech (Mechanical Engineering) in **section M-3**. He has to submit registration form within three days of receipt of this order.

Deputy Registrar (Academic)

Copy to:

1. Mr. Deepak Kumar Meena, (Roll No: - 1130502)
2. Head of the Mechanical Engg. Department
3. Deputy Registrar (Accounts)
4. Librarian
5. Prof.in-Charge (Academic)
6. Prof.in-Change (Examinations)
7. Dean (Academic) for kind information.

Subject : To approve registration process after 4th semester for submission of dissertation in respect of M.Tech programme.

As per the present M.Tech scheme the students are supposed to submit their dissertation latest by 30th June in the 4th Semester. However, in some cases the students are not able to complete their dissertation work within the stipulated period. As per the new scheme the students are awarded grade for their dissertation work. The award of grade for the dissertation is based on the number and quality of the research publications from the dissertation work. Therefore, some students desire to be given more time so that they can complete their dissertation work with good quality / publications in order to get good grades.

Under the present rules if the students registers for the 5th semester (& also subsequent semesters) he/she is required to deposit the tuition fee for the whole semester. Since the student does not receive any scholarship during this period he/she has to face considerable financial difficulty.

In order to ensure that the M.Tech students are able to do good quality research work for their M.Tech dissertation, it is proposed that:-

1. The students may be allowed to accept employment after 30th June in the 4th semester.
2. The students may be allowed to register* for dissertation in subsequent semesters (up to the maximum duration of M.Tech degree i.e. 5 years) by depositing nominal registration fee of Rs. 1,000/-(One Thousand Only) per semester until the dissertation is submitted. During the 5th semester onwards the students may be allowed to continue his dissertation work while in employment under the supervision of his supervisor in the Institute.
3. Such students who submit their dissertation after 30th June in 4th semester will not be entitled for any award/medal on the basis of their CGPA. However, these students will be awarded grades for dissertation following normal evaluation procedure.

It is recommended that the above proposal may kindly be approved with immediate effect. (applicable to M.Tech batches 2012 onwards).

Submitted for kind approval by Chairman, Senate please. After approval from Chairman, Senate it will be reported to the senate in next meeting.

20-6-14
Dean (Academics)

29/5/14
Director
(Chairman Senate)

* for registration the student will be required to be physically present at the institute.

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119
ACADEMIC SECTION

Annexure-25.17

NO. 012/ACAD/NOTIFICATION/14/351 Date:- 20-06-14

NOTIFICATION NO :- ACAD/14-03

Read :- 1) First Statute of NIT notified by MHRD on 23-04-2009.
2) Approval of the Chairman Senate dated 29-05-14.

In exercise of the power conferred under Statute 9 of First Statutes of NIT Act,2007, the Chairman, Senate has approved following in anticipation of the Senate approval.

1) Approved registration process by filling registration form and paying nominal registration fee of Rs. 1,000/- Per Semester after 4th semester subject to maximum duration of M.Tech programme(Presently it is 5 years /10 Semester) for submission of dissertation in respect of M.Tech programme. The above process shall be applicable for the students of M.Tech batch 2012 onwards only.
2) Such students shall be allowed to accept employment after 30th June in the 4th Semester.
3) Such students are not entitled for any award/medal on the basis of their CGPA. However they will be awarded grades for dissertation following normal evaluation process.

The approved items shall be placed before the Senate in next meeting for note by the Senate.

It is issued with the permission of competent authority.

20/06/14
Deputy Registrar(Academic)

All the Dean for information.
All HOD/Co-ordinators of PG Schools for reference and necessary action also requesting to inform the Senators(Professors) and publish it on notice boards.
Dean(Academic) for information.
Professor In-charge(Senate and Academic Affairs) for information and necessary action.
Sr. Registrar(Accounts) for information and necessary action
Sr. Registrar(GA & Legal) for information and necessary action.
Notice Board (Hostel No:-4) for information to the student
Prof. In-charge CCN requesting to upload it on Institute website.

Copy to :-

1. Secretary to the Hon'ble Director
2. Secretary to the Registrar

25.17 To note the approval given by Chairman Senate for registration process after 4th Semester for submission of dissertation in respect of M.Tech. programme.

The Chairman Senate has approved the following in respect of submission of dissertation for M.Tech. Programme.

1. The Students may be allowed to accept employment after 30th June in the 4th Semester.
2. The students may be allowed to register* for dissertation in subsequent semester (up to the maximum duration of M.Tech. degree i.e. 5 year) by depositing nominal registration fee of Rs. 1,000/- (One Thousand Only) per semester until the dissertation is submitted. During the 5th Semester onwards a student may be allowed to continue his dissertation work while in employment under the supervision of his in the Institute.
3. Such students who submit their dissertation after 30th June in 4th Semester will not be entitled for any award/medal on the basis of their CGPA. However, these students will be awarded grades for dissertation following normal evaluation procedure.

The Chairman Senate approved this process for M.Tech. batches 2012 onwards. The approval accorded by the Chairman and the notification is enclosed as Annexure 25.17 on Page **178** to **179.**

The Senate may kindly note.

(iii) The Senate welcomed and agreed in principle to start M. Tech. programme in '*Cyber Security*' from session 2015-16. The department will propose the scheme and syllabi for the programme to the Senate for approval.

Item 25.16 To consider and approve minor amendment in attendance benefit norms.

The Senate considered and approved the proposal.

Item 25.17 To note the approval given by Chairman Senate for registration process after 4th Semester for submission of dissertation in respect of M. Tech. programme.

The Senate noted the approval given by Chairman, Senate.

Item 25.18 To report the approval accorded by the Hon'ble Chairperson, Board of Governors.

The Senate noted the approval accorded by the Hon'ble Chairperson, Board of Governors regarding appointments of HoDs of Chemistry and Computer Engg. Departments.

Item 25.19 To consider and decide the nomination of one Professor as Senate nominee on the Board of Governors, NIT Kurukshetra.

After deliberations, it was decided to nominate the senior most Professor next to the outgoing Senate nominee on the Board of Governors.

Since there was an apparent ambiguity in the next senior most Professor, it was deemed fit to suggest preparation and circulation of seniority list of the Institute. For this purpose, a Committee under the chairmanship of Dean (P&D) comprising of members- Prof. S. Deswal, Prof. in Civil Engg. Deptt. and Registrar was constituted to scrutinize the seniority list. The seniority list will be prepared and circulated.

For this item, the Senate authorized the Chairman, Senate to nominate senior most Professor next to the outgoing Senate nominee on the Board of Governors.

Item 31.11 To decide on change of name in Educational certificates of Ms. Manju Meena D/o Sh. JD Meena Roll No. 110831, student of B.Tech. ECE programme.

The institute has received educational verification of Ms. Manju Meena, D/o Sh. J.D. Meena from Airport Authority of India. Ms. Manju Meena applied in Airport Authority of India with completely change name as Ms. Somya Jourwal, D/o Sh. Jaldhari Meena. She attached Rajasthan Gazette for change of her name from Ms. Manju Meena, D/o Sh. J.D. Meena to Ms. Somya Jourwal, D/o Sh. Jaldhari Meena. The Rajasthan Gazette was published in July 2010. She got admission in the institute based on her rank in AIEEE 2010 exam. in which her name was mentioned as Ms. Manju Meena and her fathers's name was mentioned as Sh. J.D. Meena. She was admitted in the Institute on 26.7.2010. She studied in the institute from July 2010 to June 2014 during her B.Tech. ECE programe by the name of Ms. Manju Meena, D/o Sh. J.D. Meena. She was issued all DMCs and degree certificates and other documents in the name of Ms. Manju Meena, D/o Sh. J.D. Meena. Her record in Academic, Accounts, Library and her department is also having her name as Ms. Manju Meena, D/o Sh. J.D. Meena. Since she changed her name from Ms. Manju Meena, D/o Sh. J.D. Meena to Ms. Somya Jourwal, D/o Sh. Jaldhari Meena, the institute does not have her representation to change her name from Ms. Manju Meena, D/o Sh. J.D. Meena to Ms. Somya Jourwal, D/o Sh. Jaldhari Meena. The institute replied to Airport Authority of India that degree certificate of Ms. Manju Meena, D/o Sh. J.D. Meena roll no. 110831 is issued with sr. no. 393 on 26.3.2015. The Institute also replied to Airport Authority of India that no student with the name of Ms. Somya Jourwal, D/o Sh. Jaldhari Meena studied in this institute from 2010-2014 in B.Tech. ECE programme. She represented her case for change of name after obtaining degree in July 2016. She was informed by the institute that since the Gazette was published in 2010 and there was no representation of the student for change of name during 2010-2016 hence her name from Ms. Manju Meena, D/o Sh. J.D. Meena to Ms. Somya Jourwal, D/o Sh. Jaldhari Meena could not be changed in the documents issued to her at this point of time.

She approached to the Civil Court in Kurukshetra vide Civil Case no. 218 of 2016. The institute was summoned by the Hon'ble Court and the institute represented the facts available in the academic section related to this case. The Hon'ble Court passed the judgement on 7.9.2017 to change the name of plaintiff as Ms. Somya

Jourwal, D/o Sh. Jaldhari Meena in place of Ms. Manju Meena, D/o Sh. J.D. Meena in educational certificates and to issue fresh certificates on payment of fee/charges if any, applicable as per rules.

The Senate may kindly consider the judgement of Hon'ble Court in the case of name change of Ms. Manju Meena, D/o Sh. J.D. Meena Roll no. 110831 student of B.Tech. ECE programme. The relevant documents related to this case are enclosed from (pages **124** to **141**).

Agenda Item No.: -31.11

15/9/17

Director / DR / Dean (ACad.)

NIT KURUKSHETRA,
KURUKSHETRA, HARYANA

N.I.T. KURUKSHETRA

Dy. No. 8623 Date 14/09/17						
R	DRD	DAc	DA/I	CVO	CoE	C
E	M	EC	Co	Ph	Ch	Ma
Hy	CW	WS	SW	PC	PS	EDC
PE	CON	PT	PCE	FRO	LWO	L
GA	A	SO	EO	DS	PIS	PIC

Subject: Forwarding of court order to change Name in educional certificate

Respected Sir,

I, Somya Journal was Regular Student of 2010-2014 in ECE, Roll no. 110831. I changed my name in Rajasthan Gazette ordinary publication dated 01.07.2010. Regarding that i also filed ~~on~~ a suit to change name in educional certificates in the court of Ms. SALONI GUPTA Civil Judge (Junior Division), Kurukshetra (UID NO. HR0425) with case no. 218 of 2016, CNR NO. HRKU02-001570-2016. By the decision of Court dated 07.09.2017. Sir please change my name from manju meena to Somya Journal in educional certificates i.e

(i) Original Degree in Bachelor of Technology Roll no. 110831.
(ii) Provisional degree certificate Bachelor of Technology dated 9.9.2014 Sr. No 551
(iii) Character certificate, Roll no. 110831,
(iv) B.Tech 8th semester certificate Roll no. 110831
(v) B.Tech 7th semester certificate Roll no. 110831
(vi) B.Tech 6th Semester certificate Roll no. 110831.
(vii) B.Tech 5th Semester certificate Roll no. 110831.
(viii) B.Tech 4th Semester certificate Roll no. 110831.
(ix) B.Tech 3rd Semester certificate Roll no. 110831.
(x) B.Tech 2nd Semester certificate Roll no. 110831.
(xi) B.Tech 1st Semester certificate Roll no. 110831.

16/9/17

Sh. Cyks/mlw

18/9/17

Attachment with Application (i) Copy of Civil Case NO. 218 of 2016
(ii) Rajasthan Gazette Copy dated 01.09.2010

Yr faithfully,
Ex Journal Somya
E. 110831
14.09.17

Contact no. 9649994529

~~ANNEXURE—3~~

Attachment - 2

सत्यमेव जयते

राजस्थान राज-पत्र
साधारण

RAJASTHAN GAZETTE
Ordinary

साधिकार प्रकाशित

Published by Authority

आषाढ़ 10, गुरुवार, शाके 1932—जुलाई 1, 2010

Asadha, 10 Thursday, Saka –1932–July 1, 2010

शपथ-पत्र

मैं, मंजू मीणा पुत्री श्री जलधारी मीणा आयु 18 साल निवासी मकान नं. 56, कैलाशपुरी, जगतपुरा, जयपुर, राजस्थान सशपथ बयान करती हूं कि:—

1— यह कि मेरा नाम शैक्षणिक रेकार्ड में मंजू मीणा पुत्री जलधारी मीणा अंकित है।

2— यह कि मै अपना नाम परिवर्तन करना चाहती हूं।

3— यह कि मैं अपना नाम मंजू मीणा के स्थान पर सौम्या जोरवाल रखना चाहती हूं।

4— यह कि भविष्य में मुझे मंजू मीणा पुत्री श्री जलधारी मीणा के स्थान पर सौम्या जोरवाल पुत्री श्री जलधारी मीणा के नाम से जाना व पहचाना जावे।

5— यह कि मैं यह शपथ-पत्र अपना नाम परिवर्तन कराने के समर्थन में पेश कर रही हूं।

Manju Meena
शपथग्रहिता

सत्यापन

मै, मंजू मीणा उपरोक्त शपथग्रहिता सत्यापित करती हूं कि उक्त शपथ-पत्र की तमाम बातें सही व सत्य है कोई तथ्य छिपाया नहीं है। ईश्वर साक्षी है।

Manju Meena
शपथग्रहिता

जयपुर
दिनांक :

Identified by
Rajendra Eswal
Advocate
R/330/88

NOTARY REGISTER
SERIAL No. 489
DATE 24-6-2010

ATTESTED
N. K. Mishra
24-6-2010
Notary Public Jaipur (Raj.)

NOTARY
G. C. SAINI
Advocate
Jaipur (Rajasthan) India
Regd. No. 3233
Comm. Exp. 01
27 Sept 2018
GOVT OF INDIA

Photo Copy attested
NOTARY
JAIPUR (INDIA)

18 JUN 2016

Attachment (i)

IN THE COURT OF MS.SALONI GUPTA,
CIVIL JUDGE (JUNIOR DIVISION), KURUKSHETRA
(UID No.HR0425).

Civil case No.218 of 2016
CIS No.CS-1222 of 2016
CNR No.HRKU02-001570-2016
Date of Instt.: 28.07.2016
Date of Decision : 07.09.2017

Somya Jourwal (date of birth 25.03.1992) daughter of J.D. Meena, resident of 56, Kailashpuri, Jagtarpura-Jaipur (Rajasthan).

.....Plaintiff.

Versus

1. National Institute of Technology, Kurukshetra through its Director.

2. National Institute of Technology, Kurukshetra through its Registrar.

..... Defendants.

SUIT FOR DECLARATION & MANDATORY INJUNCTION

Present: Shri Dewan Sawhney, counsel for plaintiff
Shri Vikas Sangwan, counsel for defendant

JUDGMENT:

Present suit has been filed by the plaintiff seeking a decree for declaration to the effect that correct name of plaintiff is Somya Jourwal. Further a decree for mandatory injunction directing the defendants to correct the name of plaintiff as Somya Jourwal in educational certificates in place of Manju Meena and to issue fresh said examination certificates, is also sought to be passed.

2. Brief facts of the case are that plaintiff was regular student of Batch 2010-14 in Electronic and Communication Engineering of the

(Saloni Gupta)
Civil Judge (Junior Division)
Kurukshetra 07.09.2017

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defendants and at the time of her admission, her name as Manju Meena daughter of J.D. Meena was got recorded. It is further submitted that before her admission in the said Institute, plaintiff had deposited required fee of Rs.1050/- vide receipt No.32, dated 30.06.2010 for change of her name in the office of Superintendent State Central Press (Mudarnalay) Jaipur (Rajasthan) and plaintiff had moved an application duly supported with an affidavit for change of her name in Rajasthan Gazette Ordinary Publication dated 01.07.2010. It is further submitted that plaintiff was admitted in the Institute of defendants on 26.07.2010 in the name of Manju Meena daughter of J.D. Meena but information for publication regarding change of her name by Rajasthan Government was supplied to plaintiff on 15.09.2010. So, the name of plaintiff remained recorded as Manju Meena in the record of defendants. Plaintiff had also submitted the copy of Gazette to the defendants regarding change of her name. Plaintiff also obtained the certificate dated 13.07.2016 from Deputy Superintendent, State Central Press (Mudarnalya) Jaipur (Rajasthan) in which name of plaintiff is mentioned as Somya Jourwal. However, in the educational certificates, issued by defendants, the name of plaintiff is still recorded as Manju Meena. After noticing this mistake, plaintiff requested the defendants to correct her name as Somya Jourwal in educational certificates in place of Manju Meena but defendants refused to correct her name in said certificates. Hence, the present suit.

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Examiner

(Selimi Gupta)
Civil Judge (Junior Division)
Kurukshetra, 07.09.2017

12.9.17

3. Upon notice defendants appeared and filed written statement wherein preliminary objections regarding maintainability and concealment of true and material facts etc were raised. It is also stated that at the time of her admission with the institution of defendants in the year 2010-11, in admission form, plaintiff had written her name as Manju Meena and also in provisional seat allotment letter by Central Council Board, name of plaintiff was again mentioned as Manju Meena. Further, plaintiff had also put her signatures on the different documents as Manju Meena. It is further stated that in qualifying certificates, caste certificate, character certificate and migration certificate, name of plaintiff is also written as Manju Meena and so, on the basis of said documents, the defendants have rightly issued the educational certificates by mentioning the name of plaintiff as Manju Meena. Hence, it is prayed that suit of plaintiff is not maintainable and the same may kindly be dismissed.

4. Replication was not filed. From the pleadings of the parties, the following issues were framed by court order on 18.11.2016:-

1. Whether plaintiff is entitled to a decree for declaration, as prayed for? OPP
2. Whether plaintiff is entitled to a decree for mandatory injunction, as prayed for? OPP
3. Whether suit is not maintainable? OPD
4. Whether plaintiff has concealed true and material facts from the Court? OPD

Civil Judge (Senior Divn.) Kurukshetra

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5. Relief.

Thereafter parties were called upon to lead their respective evidence.

5. In order to prove her case, plaintiff got examined herself as PW1 and J.D. Meena, father of plaintiff was examined as PW2. No other PW was examined and evidence on behalf of plaintiff was closed on 05.04.2017. Plaintiff also tendered certain documents on record during her evidence.

6. In order to rebut the evidence led by plaintiff, defendants examined Pankaj Kumar, Deputy Registrar as DW1. No other DW was examined and evidence on behalf of defendants was closed by counsel.

7. This Court has heard learned counsel for plaintiff and learned counsel for defendants and has also gone through the case file very carefully and minutely. The issue-wise findings of this Court with reasons thereof are as under:-

ISSUES NO.1 & 2:

8. Both these issued are interconnected and interlinked, hence, both are taken together for discussion. Onus to prove these issues was upon the plaintiff. It was argued by the learned counsel for the plaintiff that in view of the oral as well as documentary evidence, the plaintiff's case stands duly proved and may kindly be decreed. Counsel for plaintiff also placed reliance upon authority titled as *Navee @ Naveen Dogra and others Vs. CBSE 2013 (205) DLT 32 (Delhi High Court).*

(Saloni Gupta)
Civil Judge (Junior Division)
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9. On the other hand, learned counsel for defendants has argued that suit of plaintiff is not maintainable. It was further argued that the defendants have issued the educational certificates by mentioning correct name of plaintiff as Manju Meena. It was further argued that the plaintiff had herself provided her name as Manju Meena with defendants and in all the documents, provided to defendants, the name of plaintiff as Manju Meena is recorded. Hence, he prayed that suit of the plaintiff is not maintainable and the same may kindly be dismissed.

10. First of all, defendants are nowhere at fault in issuing educational certificates bearing name of plaintiff as Manju Meena but at the same time, it is also a fact that the plaintiff has a right to get her name corrected in the educational certificates and other relevant records, as per the actual name.

11. It is an admitted fact that at the time of admission of plaintiff with the defendants, the name of plaintiff as Manju Meena was provided and the same was recorded in the records. However, before admission of plaintiff with the defendants, the plaintiff had already moved an application in the month of June 2010 for change of her name in Rajasthan Gazette. In this regard, plaintiff has placed on record her duly sworn affidavit Ex.P11 stating therein that before 2010 her name was Manju Meena but after the year 2010, she has changed her name to Somya Jourwal and also through Gazette Notification, she has got her name changed from Manju Meena to Somya Jourwal. Further, plaintiff

(Sulcini Gupta)
Civil Judge (Junior Division)
Kurukshetra 07.09.2017

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has placed on record copy of certificate Ex.P15, issued by Superintendent State Central Press (Mudarnalay) Jaipur (Rajasthan) in which it is certified that Manju Meena daughter of Jaldhari Meena, resident of H.No.56, Kailashpuri, Jagatpura, Jaipur (Rajasthan) has changed her name through Rajasthan Gazette from Manju Meena to Somya Jourwal and recital in this regard is at page No.7 of Rajasthan Gazette, Edition 14.

12. Further plaintiff has placed on record documents Ex.P12 copy of her driving license, Ex.P13 copy of her PAN card, Ex.P21 copy of E-Admit Card, Ex.P26 copy of secondary examination certificate, Ex.P27 copy of Admission card and Ex.P28 copy of roll number slip. In all these documents, the date of plaintiff as 25.03.1992 and name of her father as Jaldhari Meena (J.D. Meena) are recorded. Hence, from perusal of these documents there does not seem to be any reason to doubt the identity of plaintiff and it can be concluded that Manju Meena and Somya Jourwal is the same person.

13. Thus, in view of the above said discussion, this Court is of the considered view that the plaintiff has brought on record cogent and material evidence to prove her case. There is no convincing evidence on behalf of defendants which could persuade this Court that Court has no power to grant the relief as prayed for. Resultantly, issues No.1 & 2 are decided in favour of the plaintiff and against the defendants.

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ISSUES NO.3 & 4:

14. Both these issues interlinked and interconnected, so the same are being taken together for discussion. Onus to prove these issues was upon defendants but counsel for defendants did not argue on these issues nor pressed the same at the time of arguments. Hence, these issue are also returned against the defendants.

ISSUE NO.5 (RELIEF):

15. In view of findings of this Court on the aforesaid issues, especially issues no.1 & 2, suit of the plaintiff succeeds and the same is hereby decreed with no order as to costs. A decree for declaration is passed to the effect that name of plaintiff is Somya Jourwal and further Manju Meena and Somya Journal is the same person. Further, a decree for mandatory injunction is also passed directing the defendants to change the name of plaintiff as Somya Jourwal in place of Manju Meena in educational certificates (as mentioned in prayer para of plaint) and to issue fresh said certificates upon payment of fee/charges, if any, applicable as per rules. Decree-sheet be prepared accordingly. File be consigned to the record room after due compliance.

Pronounced in open Court:
Dated: 07.09.2017

(Saloni Gupta)
Civil Judge (Junior Division),
Kurukshetra (UID No.HR0425).

Note: All seven pages of this judgment have been checked and signed by me.

(Saloni Gupta)
Civil Judge (Junior Division),
Kurukshetra (UID No.HR0425).

Dated: 07.09.2017

Certified to be True Copy
Examiner,
Civil Judge (Sr. Division)
KURUKSHETRA
Authorised by Section 76 o.
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DECREE SHEET

In the court of Ms. Saloni Gupta, learned Civil Judge(Junior Division), Kurukshetra.

Value of suit for purpose of jurisdiction of Rs. 200/-

Value of suit for the purpose of Court Fees Rs.05/-

Civil case No.218 of 2016
CIS No.CS-1222 of 2016
CNR No.HRKU02-001570-2016
Date of Instt.: 28.07.2016
Date of Decision : 07.09.2017

Somya Jourwal (date of birth 25.03.1992) daughter of J.D. Meena, resident of 56, Kailashpuri, Jagtarpura-Jaipur (Rajasthan).

.....Plaintiff.

Versus

1. National Institute of Technology, Kurukshetra through its Director.

2. National Institute of Technology, Kurukshetra through its Registrar.

..... Defendants.

SUIT FOR DECLARATION & MANDATORY INJUNCTION

Claim:- A decree for declaration to the effect that the true and correct name of the plaintiff is Somya Jourwal with mandatory inunction directing the defendants to correct the name of the plaintiff as Somya Jourwal by deleting the wrong name of the plaintiff as Manju Meena in its record and further the defendants be directed to correct the name of the plaintiff in following educational certificate of the plaintiff:

i) B. Tech. 1st Semester certificate dated 1.8.2011, Roll No. 110831;

ii) B. Tech. 2nd Semester certificate Se. No.16464, Roll No. 110831;

iii) B. Tech. 3rd Semester certificate dated 6.1.2012, Sr.No.13321 Roll No. 110831;

iv) B.Tech.4th Semester certificate dated 3.9.2012, Sr.No.13321 Roll No 110831;

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v) B. Tech. 5 th Semester certificate , Roll No. 110831;

vi) B. Tech. 6Th Semester certificate dated 3.9.2014, Sr. No.33815 Roll No. 110831;

vii) B. Tech. 7Th Semester certificate dated 3.9.2014, Sr.no. 33838 Roll No. 110831;

viii) B. Tech 8th Semester certificate sr. No.33862, Roll No. 110831;

ix) Character Certificate dated 9.9.2014, Sr.No.33862, Roll No.110831;

x) Provisional Degree Certificate Bachelor of Technology dated 9.9.2014, Sr. No. 33862, Roll No. 110831;

xi) Original Degree of Bachelor of Technology Roll no. 110831;

as somya jourwal-correct name of the plaintiff therein and issue to the plaintiff corrected certificates and original degree accordingly, may kindly be passed in favor of the plaintiff and against the defendants with costs.

It is further prayed that decree for declaration to the effect that Somya jourwal daughter of Jaldhari Meena (i.e.the plaintiff) and Manju Meena daughter of Jaldhari Meena is one the same person.

Any other relief to which the plaintiff is found may kindly be awarded in favour of the plaintiff and further any other additional or alternative relieves to which the plaintiff becomes entitled during the pendency of the present suit may kindly be granted to the plaintiff.

Plaint Presented On :- 28.07.2016

This suit is coming on this 7th day of September , 2017 for final disposal before me (Saloni Gupta) Civil Judge (Junior Division),Kurukshetra in presence of Shri Dewan Sawhney, counsel for plaintiff and Shri Vikas Sangwan, counsel for defendant

It is ordered that suit of the plaintiff succeeds and the same is hereby decreed with no order as to costs. A decree for declaration is passed to the effect that name of plaintiff is Somya Jourwal and further

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Manju Meena and Somya Jourwal is the same person. Further, a decree for mandatory injunction is also passed directing the defendants to change the name of plaintiff as Somya Jourwal in place of Manju Meena in educational certificates (as mentioned in prayer para of plaint) and to issue fresh said certificates upon payment of fee/charges, if any, applicable as per rules.

Cost of the Suit

		Plaintiffs	Defendants
1.	Stamp for plaint	05-00	00-00
2.	Stamp for Power	02-00	02-00
3.	Pleader Fee	20-00	20-00
4.	Stamp for Ex.	00-00	00-00
5.	Subs. for witness	0-00	00-00
6.	Process Fee	50-00	00-00
7.	Misc.	00-00	00-00
	Total	**77-00**	**22-00**

Given under my hand and seal of the Court on this 7th day of September , 2017.

Civil Judge (Senior Divn.) Kurukshetra

(Saloni Gupta),
Civil Judge(Junior Division)
Kurukshetra
UID No.HR0425

Certified to be True Copy
Examiner,
Civil Judge (Sr. Division)
KURUKSHETRA
Authorised by Section 76 o.
Indian Evidence Act. (1872)

Application No. 10747 Dt. 08-9-17
Record Received on 11-9-17
Name of Copyist Gulshan Kumar
Prepared on 12-9-17
No. of Pages 3
Cost of Copy 10/-
Urgent Fees ---
Total 10/-
Delivery Date 12-9-17

12-09-2017

राष्ट्रीय प्रौद्योगिकी संस्थान, कुरुक्षेत्र
NATIONAL INSTITUTE OF TECHNOLOGY

KURUKSHETRA - 136 119 (HARYANA) INDIA

PBX No. 01744-233100, 233200
Gram : NITKU FAX : 01744-238050

Ref. No Acad/16/418 Dated 11.07.2016

सेवा में,

श्री जलधारी मीना , कैलाशपुरी जगतपुरी,
पोस्ट ऑफिस डाक कालौनी, मालवीय नगर,
जगतपुरी रोड जयपुर, राजस्थान–302017

विषय : मंजू मीना पुत्री श्री जलधारी मीना की बी.टैक उपाधि के संबंध में ।

महोदय,

उपरोक्त विषय के संबंध में आपके पत्र दिनांक 06.07.2016 के संबंध में संस्थान निम्न स्पष्टीकरण करना चाहता है ।

1. मंजू मीना पुत्री श्री जे. डी. मीना ने संस्थान के बी. टैक इलेक्ट्रानिक्स एण्ड कम्यूनिकेशन इंजीनियरिंग में 2010 में प्रवेश किया है ।
2. उपरोक्त छात्रा ने 2010 से 2014 तक नियमित छात्रा के रूप मे अध्ययन किया है । उपरोक्त छात्रा का रोल नं 110803 कमांक नं 393 अंकित बैचलर ऑफ टैक्नोलॉजी (ECE) का डिग्री प्रमाण पत्र 26.03.2015 को जारी किया गया है ।
3. श्री जलधारी मीणा द्वारा प्रस्तुत नाम परिवर्तन गजट जो कि दिनांक 06.07.2016 को इस संस्थान में दिया गया है जो इस समय मान्य नहीं किया जा सकता । उपरोक्त गजट 01.07.2010 को राजस्थान के राज–पत्र में प्रकाशित हुआ है । इस गजट के अनुसार इन्होंने अपनी पुत्री का नाम मंजू मीणा पुत्री श्री जलधारी मीण से सौम्या जोरवाल पुत्री जलधारी मीणा करवाया था ।
4. संस्थान इस समय अपने पूर्व में जारी किए गए दस्तावेजों एवं प्रमाण पत्रों मे उपरोक्त नाम परिवर्तन करने में असमर्थ है ।

धन्यवाद ।

आपका भवदीय,

Deputy Registrar (Academic)
National Institute of Technology
Kurukshetra-136119

उपकुलसचिव, शैक्षणिक विभाग,
राष्ट्रीय प्रौद्योगिकी संस्थान , कुरुक्षेत्र ।
11/07/16

Copy to:

श्री सोहन सिंह भावर
वरिष्ठ प्रबंधक , मानव संसाधन
भारतीय विमानपत्तन प्राधिकरण
नगर विमानन प्रशिक्षण कालेज

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Seat Surrender receipt

AIEEE 2010- Engineering Stream

Round Number-: 3

Print Next

Roll No. :	26206206	**Application No. :**	1013034
Name :	MANJU MEENA	**Date of Birth :**	25-03-1992
Father's Name :	J D MEENA	**Mother's Name :**	MULBATTI MEENA
All India Rank :	71778		
Remark :	Permitted to fill up choices online for counselling - All Categories		

Surrendering Seat Details

Institute Name	Branch Name	Allotted Cat.	Quota	Choice No.	Round No.	Status
Dr. B. R. Ambedkar National Institute of Technology, Jalandhar	**Electronics & Communication Engineering**	**ST**	**All India**	**6**	**1**	**Cancelled**
National Institute of Technology, Kurukshetra	**Electronics & Communication Engineering**	**ST**	**All India**	**3**	**2**	**Surrendered**

Deposited Demand Draft Details

DD Amount	DD No.	DD Date	Bank Name	City
1000	**872684**	**28-06-2010**	**State Bank of India**	**Jaipur**
24000	**872685**	**28-06-2010**	**State Bank of India**	**Jaipur**

Candidate's Agreement

I, MANJU MEENA, not being satisfied with my presently allotted seat hereby request that I be permitted to participate in the fourth round of allotment. To be eligible to avail this facility I hereby surrender all claims on my present allotted seat. I am aware that in the next round of allotment, I may or may not get any seat depending on my new choices and AIR rank.

Note:
Candidate surrendered allotted seat at Malviya National Institute of Technology, Jaipur on Date: 14/7/2010 Time: 12:08:01

-The above - mentioned seat Allotement is **SURRENDERD because of candidate request.** The candidate eligible for further rounds of seat allotment. The candidate choices are unlocked and the candidate can modify the choices for next round.

Sign of Candidate : MANJU MEENA
Date : 14/7/2010 Time: 12:08:01

Sign of AC Official DR. ASHOK SOLANKI
Date : 14/7/2010 Time: 12:08:01

Sign of AC Official
Date : 14/7/2010 Time: 12:08:01

Dy. Centre I/C.
Admission Centre, AIEEE-2010
M.N.I.T. Jaipur (Raj.) -302017

NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA

ADMISSION FORM FOR 4 - Year B. Tech. Degree Course for 2010-2011

(To be filled in by the candidate in his/her own handwriting)

1. Name in Full: MANJU MEENA
2. AIEEE-2010 Roll No. 26206206
3. AIEEE-2010 Rank: 71778
4. Date of Birth: 25-03-1992
5. Nationality: INDIAN Religion: HINDU
6. Gender: M ☐ F ☑
7. Father's Name: J. D. MEENA
8. Mother's Name GULBATTI MEENA
9. Permanent Address 56, KAILASHPURI, JAGATPURA JAIPUR RAJ.

   Pin 302017 Phone 9887826383
10. Correspondence Address 56, kailashpuri Jagatpura, Jaipur

    Pin 302017 Phone 9887826383

    Mobile No. 9785967259
11. Details of qualifying examination :
    a) Name of Exam Class XII
    b) Board/Univ. CBSE
    c) Year, Roll No. 2010, 1216730
    d) Institution : Name K.V.NO3 Jaipur

       City Jaipur

Paste here front side passport size photograph

(For Office Use Only)

Roll No. 110831

Section L-2

Branch EE

Category S-T

State Raj

Ranjeet
Deputy Registrar (Acad.)

Received Rs. 1000/-

vide Receipt No. 2919

Dated 26/7/10

SPZ
Signature
Institute Cashier

e)

SUBJECT	Max. Marks	Marks obtd.	%age
Physics	100	87	87%
Chemistry	100	92	92%
Mathematics	100	85	85%
English	100	60	60%
Total	400	324	~~80.5%~~ 81.00% 80.5%

f) Compartment : YES/NO ✓ If yes, Subject(s).....

g) Passed in first attempt ✓ YES/NO

AIEEE -2010

Central Counselling Board

All India Engineering Entrance Examination

Engineering Stream

Print Back

Provisional Seat Allotment Result

Candidate Details

Roll Number:	26206206
Name:	MANJU MEENA
Date of Birth:	25-03-1992
AIR:	71778
Category:	ST
Sub Category:	-
State of Eligibility:	Rajasthan

Previous Seat allotment Details

You have surrendered your previous seat allotment.

Seat allotment Details of Round 4

Institute Name	Branch Name	Allotted Category	Allotted Quota	Choice No	Status
National Institute of Technology, Kurukshetra	Electronics & Communication Engineering	ST	AI	3	Present Allotment

Message

1. You have to report to allotted institute during July 22 – 27, 2010. Non reporting in the above period will lead to cancellation of seat and you will not be considered for subsequent rounds of admissions.
2. Candidate has to submit original documents and pay the remaining /full fees as prescribed by the allotted institute.
3. Candidate has already paid counselling fee at AC.

Candidates are advised to regularly visit the http://www.ccb.nic.in for further information / regular updates.

Note : This is based on the personal data viz. Category, Sub Category, State of Eligibility and Gender etc. submitted by the candidate. CCB/NIC is not responsible for the truth/factualness of the data. Neither **NIC** nor **CCB** is responsible for any inadvertent error that may have crept in the results being published on **NET**. The result published on the net is for immediate information to the examinees.

CENTRAL BOARD OF SECONDARY EDUCATION, DELHI

ADMIT CARD FOR All India Engineering/Architecture Entrance Examination (AIEEE) - 2010

Centre No.: 262015 Centre of Examination:
RUKMANI BIRLA MODERN HIGH SCHOOL SHANTI NAGAR, GOPALPURA BYPASS JAIPUR-302018

Course: B.E/B.TECH

Roll No: 26206206

07/09566 /2235838 0368670

22. Candidate's mailing address in CAPITAL Letters only

Name: MANJU MEENA
Address: PLOT NO-56, KAILASHPURI, MALVIYA NAGAR
City: JAIPUR
State: RAJASTHAN
Pincode: 3 0 2 0 1 7

Date of Exam: 25.01.2010 Paper: PAPER-I Timings: 0930-1230 hrs

Question Paper Language: ENGLISH Date of Birth: 25/03/92

Sex: FEMALE Application Form No: 1013034

State Code of Eligibility: (29) Rajasthan

Category: ST Sub Category:

Candidate's Name : MANJU MEENA

Father's Name : J D MEENA

PLEASE SEE BACK PAGE FOR DIRECTIONS

Director (Spl. Exams)

Signature of the Candidate
Manju Meena

Manju Meena

क्रम संख्या/
S. No. SSE/ 2008/ 049198

(03625)

केन्द्रीय माध्यमिक शिक्षा बोर्ड

Central Board of Secondary Education

A/08/03625/0194646

सेकण्डरी स्कूल परीक्षा, 2008

ALL INDIA SECONDARY SCHOOL EXAMINATION, 2008

यह प्रमाणित किया जाता है कि
This is to certify that MANJU MEENA

अनुक्रमांक Roll No. 1118153

आत्मज/आत्मजा ~~Son~~/Daughter of

श्रीमती Smt. GULBATTI MEENA

एवं श्री & Shri J D MEENA

जिनकी जन्म तिथि Born on TWENTY FIFTH MARCH NINETEEN HUNDRED NINETY TWO

है, ने बोर्ड द्वारा मार्च, 2008 में आयोजित सेकण्डरी स्कूल परीक्षा
passed the Secondary School Examination of the Board held in March, 2008

विद्यालय से from KENDRIYA VIDYALAYA NO 3 JAIPUR RAJ

निम्न विषयों में उत्तीर्ण की :-
in the following subjects :-

ENGLISH COMM.	HINDI COURSE-A	MATHEMATICS
SCIENCE	SOCIAL SCIENCE	

Manju Meena

दिल्ली
Delhi

दिनांक
Dated 29-05-2008

M Sharma
परीक्षा नियंत्रक
Controller of Examinations

टिप्पणी : संस्थागत विद्यार्थी का संपूर्ण मूल्यांकन करते समय, बोर्ड द्वारा निर्धारित विद्यालयीय मूल्यांकन प्रमाणपत्र का भी संज्ञान वांछित है।
NOTE : While judging regular students, it is expected that CERTIFICATE OF SCHOOL-BASED EVALUATION would be taken cognizance of.

141

Item 31.12 To note eligibility criteria for allocation of seats under MEA (Welfare) quota in the NITs from the academic year 2018-19.

The MHRD has sent a copy of letter no. F.No. 37-1/2017-TS.III dated 28th July, 2017 issued to Ministry of External Affairs in connection with allocation of seats by MHRD in Degree Level Engineering Courses in NITs by email dated 9th August 2017. The Ministry has approved that the original practice (minimum SAT-II score) adopted by the MEA for allocation of seats under MEA (Welfare) quota in the National Institutes of Technology (NITs) may be followed for the academic year 2017-18. However, the eligibility criteria prescribed in para (ii) of this Ministry's letter No. F.31-1/2015-TS.II(Pt.) dated 7th July, 2017 be followed from the academic year 2018-19. The MHRD has approved 6 seats in each major B.Tech. programmes except Production & Industrial Engineering. The para 2 (ii) of the letter is reproduced as below:

"A student should fulfill minimum eligibility criteria of SAT-II of score 1800 with CGPA of 6.5 or equivalent in class XII or its equivalent".

The Senate may kindly note the allocation of seats by MHRD in NIT Kurukshetra and eligibility criteria of SAT-II. Relevant documents are enclosed from (pages **143** to **147**).

N.I T. KURUKSHETRA
Dy. No. 7690 Date. 10/8/17

R	DPD	DAE	DAd	CVO	SOF	C
E	M	Ec	Co	Pl.	CL	Ma
Hu	CW	WS	ST	PC	PS	EDC
PE	CON	PT	PCE	PRC	LIC	L
GA	A	SO	EO	GE	PIS	PIC

Agenda Item No. 31.12
(4341)2
16/8/17

director . <director@nitkkr.ac.in>

Allocation of seats by MHRD in Degree Level Engineering Courses in NITs - reg.

technical section <technicalsection3@yahoo.co.in> Wed, Aug 9, 2017 at 12:22 PM
Reply-To: technical section <technicalsection3@yahoo.co.in>
To: "director@manit.ac.in" <director@manit.ac.in>, "registrar@manit.ac.in" <registrar@manit.ac.in>, "director@nitc.ac.in" <director@nitc.ac.in>, "registrar@nitc.ac.in" <registrar@nitc.ac.in>, "director@nitdgp.ac.in" <director@nitdgp.ac.in>, "registrar@nitdgp.ac.in" <registrar@nitdgp.ac.in>, "director@nith.ac.in" <director@nith.ac.in>, "registrar@nith.ac.in" <registrar@nith.ac.in>, "director@mnit.ac.in" <director@mnit.ac.in>, "registrar@mnit.ac.in" <registrar@mnit.ac.in>, "director@nitj.ac.in" <director@nitj.ac.in>, "registrar@nitj.ac.in" <registrar@nitj.ac.in>, "director@nitjsr.ac.in" <director@nitjsr.ac.in>, "registrar@nitjsr.ac.in" <registrar@nitjsr.ac.in>, "director@nitkkr.ac.in" <director@nitkkr.ac.in>, "registrar@nitkkr.ac.in" <registrar@nitkkr.ac.in>, "director@nitp.ac.in" <director@nitp.ac.in>, "registrar@nitp.ac.in" <registrar@nitp.ac.in>, "director@nitpy.ac.in" <director@nitpy.ac.in>, "registrar@nitpy.ac.in" <registrar@nitpy.ac.in>, "director@nitrr.ac.in" <director@nitrr.ac.in>, "registrar@nitrr.ac.in" <registrar@nitrr.ac.in>, "director@svnit.ac.in" <director@svnit.ac.in>, "registrar@svnit.ac.in" <registrar@svnit.ac.in>
Cc: "uswel@mea.gov.in" <uswel@mea.gov.in>, "deanac@admin.nitdgp.ac.in" <deanac@admin.nitdgp.ac.in>

Sir \ Madam,

Please find attached a copy of communication issued on 28th July, 2017 to the Ministry of External Affairs in connection with above mentioned subject, for your kind information and further necessary action please.

Attached File : Letter to MEA for allocation of Seats.pdf

Please acknowledge receipt.

Thanks & Regards

Technical Section - III (NITs Desk),
Department of Higher Education,
Ministry of Human Resource Development,
Room No.435, C - Wing,
Shastri Bhawan, New Delhi - 110 001,
Tel: 011 - 23070177, Fax:011 - 23384345,
Email: nit.edu@nic.in, technicalsection3@yahoo.co.in

[Quoted text hidden]

2 attachments

- **Letter to MEA for allocation of Seats.pdf** 79K
- **Letter for MEA SEATs.pdf** 2280K

10/8/17
R/Dean (Acad.)
10/8/17
11/8/2017
DR(Acad)

F.No.37 - 1 / 2017 - TS.III

Government of India
Ministry of Human Resource Development
Department of Higher Education
--*-*-*

Shastri Bhawan, New Delhi,
dated, the 28th July, 2017

To

The Joint Secretary (AD & Welfare),
Ministry of External Affairs,
Room No.149, 'C', South Block,
New Delhi - 110001.

Subject:- Allocation of Seats by MHRD in Degree Level Engineering Courses in NITs - regarding.

Sir,

I am directed to refer to your communication No.Q/Wel/855/2/2017-Eng. dated 19th July, 2017 on the subject mentioned above and to state that the competent authority has approved that the original practice (minimum SAT-II score) adopted by MEA for allocation of seats under MEA (Welfare) quota in the National Institutes of Technology (NITs) may be followed for the academic year 2017 - 2018. However, the eligibility criteria prescribed in para 2 (ii) of this Ministry's letter No.F.31-1/2015-TS.II (Pt.) dated 7th July, 2017 be followed from the academic year 2018 - 2019.

2. This issues with the approval of the competent authority.

Yours faithfully,

[A.K. Singh]
Under Secretary to the Government of India
Tel: 23384897
Fax: 23384345

Encl.: as above.

No.F. 32-1/2015-TS.II(PL.)
Government of India
Ministry of Human Resource Development
Department of Higher Education
TS.III Section

New Delhi, the 7 July, 2017

Subject: Allocation of seats by MHRD in Degree Level Engineering Courses in the National Institutes of Technology (NITs) regarding.

As you are aware that there is an ongoing Scheme of Ministry of HRD for providing the seats in various National Institutes of Technology (NITs) under MEA (Welfare) quota for the official of Government of India working in mission abroad. Under above schemes, a total of 62 seats are allotted in NITs. For year 2017-18, following seat matrix has been approved.

S.No	NIT	Branches	Seat
1	Bhopal	Civil Engineering	1
		Computer Science & Engineering	1
		Electrical Engineering	1
		Electronics & Communication Engineering	1
		Mechanical Engineering	1
		Total	5
2	Calicut	Civil Engineering	1
		Electronics & Communication Engineering	1
		Electrical & Electronics Engineering	1
		Mechanical Engineering	1
		Chemical Engineering	1
		Bio Technology	1
		Total	6
3	Durgapur	Bio-Technology	1
		Chemical Engineering	1
		Computer Science & Engineering	1
		Electronics & Communication Engineering	1
		Electrical Engineering	1
		Information Technology	1
		Mechanical Engineering	1
		Total	7
4	Hamirpur	Civil Engineering	1
		Electrical & Electronics Engineering	1
		Mechanical Engineering	1
		Electronics & Communication Engineering	1
		Computer Science & Engineering	1
		Chemical Engineering	1
		Total	6

Contd../

S.No	NIT	Branches	Seat
5	Jaipur	Civil Engineering	1
		Computer Science & Engineering	1
		Electronics & Communication Engineering	1
		Electrical Engineering	1
		Mechanical Engineering	1
		Chemical Engineering	1
Total			6
6	Jalandhar	Bio Technology	1
		Chemical Engineering	1
		Civil Engineering	1
		Computer Science & Engineering	1
		Electronics and Communication Engineering	1
		Industrial and Production Engineering	1
		Instrumentation and Control Engineering	1
		Mechanical Engineering	1
		Textile Technology	1
Total			9
7	Jamshedpur	Computer Science & Engineering (CSE)	2
Total			2
8	Kurukshetra	Civil Engineering	1
		Electrical Engineering	1
		Mechanical Engineering	1
		Electronics & Communication Engineering	1
		Computer Engineering	1
		Information Technology	1
Total			6
9	Patna	Civil Engineering	1
		Computer Science & Engineering	1
		Electronics and Communication Engineering	1
		Electrical Engineering	1
		Mechanical Engineering	1
Total			5
10	Puducherry	Computer Science & Engineering	2
Total			2
11	Raipur	Electrical Engineering	1
		Mechanical Engineering	1
Total			2

Contd. /

S.No	NIT	Branches	Seat
12	Surat	Civil Engineering	1
		Mechanical Engineering	1
		Electrical Engineering	1
		Electronics & Communication Engineering	1
		Computer Engineering	1
		Chemical Engineering	1
		Total	6
		Grand Total	**62**

2. Following may please be noted for allotment of above seats:-

(i) The Ministry of External has a committee headed by the JS level officer for deciding the allocation of seats under MEA (Welfare) quota. Director (NITs), Ministry of HRD should be included as member of aforesaid committee.

(ii) A Student should fulfill minimum eligibility criteria of SAT-II of score 1800 with CGPA of 6.5 or equivalent in class XII or its equivalent.

(iii) The list of selected students should be sent to concern NIT directly with a copy to NIT Division MHRD. The concerned NIT will verify the necessary documents before admitting the students.

Kindly do needful.

7/7/17

[Sanjeev Sharma]
Director (NITs)
TEL : 23070186

To

Shri. Sibi George
Joint Secretary (Administration),
Ministry of External Affairs
Room No 149 'C',
South Block
New Delhi – 110001.

Item 31.13 To consider and approve the composition of DAC, BOS & DRC

In 48th SCSA meeting held on 16.7.2016, a committee was constituted to recommend the composition of DRC & DAC. The committee submitted its report. But since the report was inconclusive and comprised of only views of the members, another committee was constituted in 29th Senate meeting held on 20.2.2017 vide item no. 29.2 comprising of Prof. D.K. Nauriyal, Prof. IIT Roorkee, Prof. Baldev Setia, Prof. CED, Prof. Rajender Kumar, HSS and prof. Ashutosh Kumar Singh, CA. As the case could not be resolved by this committee, the Hon'ble Director constituted the following committee to frame the composition and scope of DAC, DRC and BOS of all department:

1.	Prof. A. Swarup	Chairman
2.	Prof. K.S. Sandhu	Member
3.	Prof. Brahmjit Singh	Member
4.	Prof. Baldev Setia	Member
5.	Prof. Surjeet Angra	Member

The report of the committee is enclosed from (pages **149** to **152**).

The Senate may consider the report of the committee and approve.

Agenda Item No.: 31.13

National Institute of Technology Kurukshetra

20-09-2017

Ref.: Letter No. Acad/2017/ - , Dt. 04-09-2017

Sub.: Framing the Composition and Scope of DAC, DRC and BOS for all Departments

Report of the Committee

The Committee met twice and discussed the matter. Three important activities, e.g., Administrative, Academic and Research, have been considered in the functioning of a Department. The following framework of Departmental Committees has been discussed and informed to the members of the Committee. Three of the Committee members expressed the agreement to the following proposal; other two members did not respond. Therefore the proposal below is recommended.

Proposed Departmental Committees

1. Board of Departmental Administration(BDA)

Constitution of BDA:-

It comprises of the followings.

1. HoD – Chairman
2. Immediate Ex-HoD – Member
3. Faculty Next to HoD – Member
4. *Two faculty members (by seniority)

*For big departments: senior most professor/associate professor (if professors are not available), preferably from the specializations if available but not covered at 1, 2&3.
For small departments: where professors/associate professors are not available, these members to be adopted from other departments and are to be nominated by the director, on the recommendation of HoD.

Scope of work:

(i) To frame / implement the policies and other administrativeactivities for the smooth working of the department.

(ii) Coordination with BDAA and BDR and Institute Administration

2. Board of Departmental Academic Affairs (BDAA)

There are three different subboards* under this, each board chaired by the H.O.D of respective department. These are:

1. Board of Departmental Academic Affairs (UG); BDAA (UG)

(i) 'R' (Copy to) 'R'
(ii) Dean Academic

To be taken up in the next meeting 23/9/17

II. Board of Departmental Academic Affairs (PG); BDAA (PG).
III. Board of Departmental Academic Affairs (PhD); BDAA (PhD).

The above subdivision may not be applicable to Small departments, in such case only One Committee will be sufficient.

I. Constitution of BDAA (UG)

It comprises of the followings.

1. HoD – Chairman.
2. Immediate Ex-HoD – Member
3. Faculty Next to HoD – Member
4. *Two faculty members (by seniority).
5. One faculty member as co-ordinator for UG activities is to be nominates by HoD (associate/assistant professor).

Scope of work:-

(i) Allocation of Course Coordinators for Curriculum delivery/ Paper setting /Evaluation etc.
(ii) Curriculum revision / Labs upgradation. In the events of major revisions in Curriculum, two External Experts shall be involved and invited (One from Academics and One from Industry).
(iii) Proposals for New Programs / New Labs
(iv) Coordination with T & P Cell
(v) Planning the activities and required funds (to be informed to BDA)

II. Constitution of BDAA (PG)

It comprises of:

1. HoD – Chairman.
2. Immediate Ex-HoD – Member
3. Faculty Next to HoD – Member
4. *Two faculty members (by seniority).
   $One/ Two faculty members as co-ordinator for PG activities(as per number of PG Programs), nominates by H.O.D (associate/assistant professor).

*For big departments: senior most professor/associate professor (if professors are not available), preferably from the specializations if available but not covered at 1, 2&3.
For small departments: where professors/associate professors are not available, these members to be adopted from other departments and are to be nominated by the director, on the recommendation of HoD.

Scope of work:

(i) Allocation of Course Coordinators for Curriculum delivery/ Paper setting /Evaluation/ Scholarship related/ Dissertation allocation/ Monitoring etc.

(ii) Curriculum revision / Labs upgradation. In the events of major revisions in Curriculum, two External Experts nominated by HOD, shall be involved and invited (One from Academics and One from Industry).

(iii) Proposals for New Programs / New Labs

(iv) Coordination with T & P Cell

(v) Planning the activities and required funds (to be informed to BDA)

III. Constitution of BDAA (PhD)

It comprises of;

1. HoD – Chairman.
2. Immediate Ex-HoD – Member
3. Faculty Next to HoD – Member
4. *Two faculty members (by seniority).
5. RAC, Research Scholar Advisory Committee
6. External expert (preferably from premier academic institutions) only for Comprehensive evaluation and Pre-synopsis seminar, nominated by HoD on the recommendation of RAC.

*For big departments: senior most professor/associate professor (if professors are not available), preferably from the specializations if available but not covered at 1, 2&3.
For small departments: where professors/associate professors are not available, these members to be adopted from other departments and are to be nominated by the director, on the recommendation of HoD.

Where RAC comprises of;

1. H.O.D/H.O.D (nominee).
2. Two internal faculty members (professor/associate professor). These are to be recommended by the concerned supervisor(s).
3. Supervisor(s).

Activities of RAC:Monitoring the progress and recommend Semester report and registration, conduct the seminars of research scholar.

However for the Ph.D. admissions, One Coordinator with one/ two faculty members may be nominated by the department to complete the admission process. However during

interview/presentations for this purpose committee will be comprising of members fromSr no 1 to 4 & all interested faculty members of the department.

Scope of work:

(i) Conduct of Ph.D. admission process/ Comprehensive Exam. and Pre-Synopsis Seminar
(ii) Allocation of Supervisor/ RAC/ Scholarship related/ Dissertation Examiners etc.
(iii) Arranging External Experts
(iv) Planning the activities and required funds (to be informed to BDA)

3. Board of Departmental Research (BDR)

It comprises of the following:

1. HoD – Chairman.
2. Immediate Ex-HoD – Member
3. Faculty Next to HoD – Member
4. *Two faculty members (by seniority).

*For big departments: senior most professor/associate professor (if professors are not available), preferably from the specializations if available but not covered at 1, 2&3.
For small departments: where professors/associate professors are not available, these members to be adopted from other departments and are to be nominated by the director, on the recommendation of HoD.

Scope of work:

(i) Recommendation of Proposals for Sponsored projects, consultancy, expert lectures, organisation of conferences, workshops, short term courses etc.
(ii) Recommendation for Patents / IPRs
(iii) Planning the activities and required funds(to be informed to BDA)

Submitted for kind consideration.

A.Swarup 20/09/17
(A.Swarup)

Director

Item 31.14 To consider and approve the report of the committee constituted for framing the rules for punishment to students resorting to use of Unfair Means in Examinations.

The Senate in its 30th meeting held on 6.6.2017 vide item no. 30.06 decided as under:

"The Senate appreciated the concern for having a set of rules for punishment to students resorting to use of unfair means. It was decided to constitute a committee with Prof. V.K. Bajpai as Head of the Committee. The Committee will submit its report within one month".

Accordingly, the following committee was constituted to frame a set of rules for punishment to students resorting to use of unfair means:

1. Prof. V.K. Bajpai — Chairman
2. Prof. Gian Bhushan — Member
3. Prof. A.S.V. Ravi Kanth — Member

The above committee submitted its recommendations as enclosed. (pages **154** to **160**).

The Senate may consider and approve the report of the committee.

(14)

Mechanical Engineering Department
NIT Kurukshetra

No.MED/2017/1825 Dated: 03.10.2017

Subject: Framing of Rules for punishment to students resorting to use of Unfair Means in Examinations

Reference: **Letter No Dean (Acad)/548 dated 6.9.2017**

With above referenced letter the Committee, after taking into consideration references from reputed institutions in India & abroad and the feedback from senators, has framed the set of rules for punishment to students resorting to use of Unfair Means in Examinations.

Please find enclosed the recommendations of the committee for your kind consideration and further necessary action.

VKBajpai

V K Bajpai
Chairman of the Committee

To be taken up for next senate
action taken report.
5.10.2017

Ms Madhu

S-Item
30.5

INSTRUCTIONS AND PENALTY FOR USE OF UNFAIR MEANS

1. The salient instructions for the conduct by a student in the Examination are printed on the cover page of the answer book. These may include

To Do List

(i) Be in the respective seats ten minutes before the exams.
(ii) Entry into examination hall after thirty minutes of start of paper is not allowed.
(iii) Bring your ID card. Display it appropriately.
(iv) Leave all materials like slips of papers/mobiles/digital diaries/ study material/ revision notes etc. outside the hall. Forgetting to take out in a hurry or worry is no excuse.
(v) You must sit as per seating plan displayed outside the halls or notified on your intranet.
(vi) You must ensure that you sign your attendance slip before leaving the Examination Hall.
(vii) Only non-programmable calculators are allowed in the examination.

Not to Do List

(i) Do not get late.
(ii) Do not carry unauthorized materials inside the examination hall:
  (a) Short notes,
  (b) Loose papers
  (c) Notebooks,
  (d) Mobiles,
  (e) Digital diary,
  (f) Do not write anything on covers.
(iii) Even if, material is not related to the examination, you will be charged for UFM.
(iv) You are not allowed to leave the hall before half time of paper.
(v) Do not copy, Talk or indulge in unfair means. The report provided by the Invigilator is final. No excuses of any kind will be listened to or accepted.

2. Any contravention of these instructions and the use of any unfair means will render the student liable for punishment.

2.1 Actions by the Invigilator's on Detecting Unfair Means Case

The invigilator will report the matter to the centre superintendent. The invigilator/Center Superintendent will proceed as per the guidelines given below:

(a) As soon as a student is suspected by the invigilator or any other authorized person of having resorted to unfair means he/she shall immediately take possession of the answer book along with the relevant material found with the student. The papers, notes, books, electronic devices etc. found in possession of the student shall be duly signed by the student and the invigilator, sealed and attached with the seized

answer-book in presence of the student. In case student is found to have written something on the body part a photo of same may be taken on the web cam available etc, if possible. In case student indulges in UFM other than possession of unauthorized material like talking to fellow student, attempting to copy from fellow student, allowing fellow student to copy, discussing answer with fellow student outside the hall etc., the nature of offence must be duly recorded by the invigilator.

(b) The Invigilator/Center superintendent will get the prescribed form (attached as Annexure) for unfair means filled and signed by the student and give his / her comments on the same, in prescribed place.

(c) After completing all the above formalities, a fresh answer-book shall be given to the student for completing the Examination.

(d) If the student does not hand over the relevant material and / or refuses to fill up and sign the prescribed form, the same shall be recorded on the prescribed form. In this case, co-invigilator may sign as a witness to the event.

(e) No extra time will be given for completing the Examination as a result of this procedure.

(f) After Examination is over, these answer books duly marked as I (confiscated copy) and II (freshly issued copy) along with the material found in possession and the prescribed form duly filled and signed by the invigilator shall be delivered separately to the Prof. I/C Examination by Center Superintendent.

2.2 What constitutes an UFM Case

A student necessarily need not be actively involved in cheating to be viewed as a case of UFM. Willful or even unintentional mistake of noncompliance of instructions/guidelines for the examination may also be charged as UFM. The acid test for the same is possession of material or indulgence in an act which may provide unlawful gains.

2.3 Categories of Offences and Punishments

Following actions may be taken for different categories of offences enumerated below:

Category 1:

Nature of Offence

(a) Talking to another candidate or any person inside or outside the examination hall without the permission of the invigilator.
(b) In case of Practical examinations presenting to the examiner a practical or class work note book not prepared by himself / herself.
(c) Refusing to obey the orders of the Centre Superintendent/invigilator.
(d) Changing the seat without the permission of the Centre Superintendent/invigilator or occupying the seat not allotted to him / her.
(e) Communicating or attempting to communicate, directly or through person, with an examiner with the object of influencing him / her in the award of marks.

The invigilator in charge of the room/hall shall immediately take possession of the first answer book. The student shall be informed that the first answer sheet is being recommended to be cancelled and same may not be evaluated. The student shall be provided with a second answer book. The first answer-book shall be cancelled after deliberations of the UFM committee and the second answer-book only is to be evaluated.

Action to be Taken: Disqualification for at least One Semester (forthcoming)

The upper limit of disqualification will be decided by Unfair Means Committee depending upon the nature of offence.

The candidate can appeal against the decision of Unfair Means Committee to the Director of the institute within 15 days of the receipt of the copy of the decision.

Category 2:
Nature of Offence

(a) Being in possession in the examination hall, of papers, books, notes or writing on any part of the candidate's clothes or any writing on his/ her body or table or desk or instruments like programmable calculators, electronic gadgets, mobiles, bluetooth, iPod etc. or any other material intended to be of possible help to the candidate in the examination.

(b) Leaving the examination hall without delivering to the invigilator concerned the answer book or may part thereof or taking away the same or tearing it or otherwise disposing it of or tearing the answer-book of other candidate.

(c) Coming to the examination hall under the influence of alcoholic drink or drugs.

(d) Copying or attempting to copy from the objectionable material found in his / her possession or copying or attempting to copy from another candidate or assisting another candidate to copy from the objectionable material in his / her possession or from his / her answer-book.

(e) Receiving help or attempting to receive help for answering the question paper from any source in any manner, inside or outside the examination hall.

(f) Swallowing or attempting to swallow a note or paper or running away with it or causing its disappearance or destroying it in any manner.

(g) Writing on any piece of paper or on any other material any question or a part thereof set in the question paper or anything connected with it or a solution thereof.

(h) Smuggling an answer book of a continuation sheet or any part thereof in or outside the place of examination.

(i) Making an appeal to the examiner in the answer book.

(j) Knowingly writing another person's Roll Number on one's answer book.

The invigilator in charge of the room/hall shall immediately take possession of the first answer book immediately on occurrence or detection and the student will not be supplied fresh answer book. **The UFM committee may award cancellation of the concerned paper and direct for award of zero marks in the concerned examination**

Action to be Taken: Disqualification for at least Two Semesters (forthcoming)

The upper limit of disqualification will be decided by Unfair Means Committee depending upon the nature of offence.

The candidate can appeal against the decision of Unfair Means Committee to the Director of the institute within 15 days of the receipt of the copy of the decision.

Category 3:

Nature of Offence:

(a) Misbehaving with the Centre Superintendent/invigilator or any other member of the Supervisory staff or any member of the inspection team or the flying squad, before, during or after the examination or creating disturbance in the examination hall or in its vicinity or organising a walk out; or instigating others to walk out; or misconducting oneself in any manner in or outside the examination hall or disturbing or disrupting the examination in any manner whatsoever; or carrying into the examination hall fire-arms or any other weapon..

(b) Using abusive or obscene language in the answer book.

Action to be Taken: Disqualification for at least Four Semesters (forthcoming)

The upper limit of disqualification will be decided by Unfair Means Committee depending upon the nature of offence.

The candidate can appeal against the decision of Unfair Means Committee to the Director of the institute within 15 days of the receipt of the copy of the decision.

Category 4:

Nature of Offence:

Getting oneself impersonation by someone in the examination or impersonating another candidate.

Action to Be Taken: Disqualification for at least four semesters (forthcoming) and FIR to be lodged against the concerned students

The upper limit of disqualification will be decided by Unfair Means Committee.

2.4. Convening of Committee on Unfair Means

A committee (Standing Committee) appointed by the Director shall enquire into case of unfair means in Examination. Composition of the committee shall be:

1. Dean (SW) – Chairman
2. Professor nominated by Director – Member
3. Subject expert of the Concerned Department – Member
4. Concerned Center Superintendent – Member
5. Deputy Registrar (GA &Legal) – Member

The committee shall thoroughly examine the UMC cases on the basis of the material/documents placed and give hearing to the student and the concerned invigilator. It shall submit its recommendations after laying down clearly the nature of the offence to the Dean (Academic) for consideration and necessary orders.

5.10.17
Prof. A S V Ravikanth
(Member)

3.10.17
Prof. Gian Bhushan
(Member)

3.10.2017
Prof. V K Bajpai
(Chairman)

Proforma - UFM-1

FORM FOR UNFAIRMEANS

1.	Roll No.	:	
2.	Name of Student	:	
3.	Programs/Branch/Specialization	:	
4.	Semester	:	
5.	Centre No. and Room No.	:	
6.	Date of Examination	:	
7.	Time _____	:	From _____ To _____
8.	Course Code	:	
9.	Course Title	:	_____

Details of Seized Material (Pl. Attach): (All the material should be signed by the Invigilator of the Examination and the student) Mobiles confiscated shall be deposited with Centre Superintendent.

1.

2.

3.

Statement of Student:

Signature of Student

Date _____ Time _____

Statement of Invigilator: (Record circumstances of offences in brief the statement should be definite and unambiguous.

Certified that the statement by the student was made in my presence or the student declined to give any statement. (Cut whichever not applicable)

Signature of Invigilator
(Name)

Signature of Center Superintendent
(Name)

Item 31.15 To consider and approve the report of the committee constituted for framing the rules for re-registration for Ph.D. cases beyond the normal period of seven years.

The Senate in its 30th meeting held on 6.6.2017 vide item no. 30.12 authorised the Director to constitute a committee to frame rules for re-registration for Ph.D. cases beyond the normal period of seven years.

Accordingly, a committee comprising of following was constituted:

1. Prof. J.K. Chhabra — Chairman
2. Prof. Vinod Kumar — Member
3. Prof. Mahesh Pal — Member

The report of the committee is enclosed. (pages **162** to **163**).

The Senate may consider and approve the report.

Computer Engineering Department
N.I.T. KURUKSHETRA

No: Co/2017/ 606 Dated: 18-9-2017

Sub: Rules for re-registration for PhD beyond the period of 7 years

Ref: Letter numbers Dean(Acad)/550 dated 6-9-2017 and Dean(Acad)/ dated 8.9.2017

With ref. to letter numbers mentioned above, please find enclosed the rules proposed by the constituted committee for re-registration for PhD beyond the period of 7 years.

The committee recalled that there are already some pending cases of scholars (as reported in the last Senate meeting held on 6.6.2017), who may request the re-registration due to cancellation of their PhD registration and the process of framing of these rules was initiated in light of those cases. The proposed rules require that the scholar must request for re-registration within a period of 3 months of cancellation of registration. It is already more than 3 months since the last senate meeting. Hence the committee is of the opinion that, for the scholars whose cases were reported for the PhD cancellation in the Senate meeting of 6.6.2017, the delay beyond the period of 3 months may please be condoned by the competent authorities, if they are willing to apply for re-registration.

Submitted for further necessary actions please.

18.9.17

Jitender Kumar Chhabra
Chairman,
Committee for re-registration rules for PhD

Encl: Rules for Re-Registration for PhD beyond Period of 7 years

DEAN (ACADEMIC)

This is one of the action taken report vide agenda item. 30.6

Rules for Re-Registration for PhD beyond Period of 7 years

These rules will be applicable to those scholars only whose registration into PhD got cancelled due to non-submission of the thesis within maximum time (i.e. seven years). These rules are not applicable to scholars whose registration was cancelled due to any other reasons such as clauses covered under R-20.

If the registration of a scholar into PhD got cancelled due to non-submission of the thesis within maximum time, the scholar may be allowed by the Director to re-register for PhD on the recommendations of supervisor, DRC and Dean (Academic). The following rules will be applicable for such scholars:

1. The scholar will request the Chairman DRC with the recommendations of his/her supervisor(s) for re-registration within a period of 3 months of cancellation of his/her registration. Supervisor/Supervisors will recommend the re-registration only if the quantum of required work and publication requirements for submission of PhD thesis can be completed within next one year.

(i.e. completion 8 7 yrs from date of request)

2. The application of the scholar will be forwarded/recommended through DRC and Dean (Academic) to the Director, and Director may allow for re-registration to the scholar. If allowed, the scholar will deposit a re-registration fee of Rs 5000 (Rs Five Thousand only) and the date of submission of this fee will be considered as his/her date of re-registration. In addition to this re-registration fee, the normal semester fee of current semester will be payable, if not already paid. Semester fee for upcoming semesters will be payable as per rules.

3. The previous results of his/her course work and comprehensive examinations, if any, will be valid and the scholar need not repeat these steps again.

4. The re-registered scholar will be permitted to submit his/her thesis not before 6 months of his/her re-registration. The maximum period for a re-registered scholar to submit his/her thesis will be one year, beyond which the re-registration will stand cancelled automatically and no further re-registration will be possible.

5. The eligibility conditions (regarding publication requirements etc) for submission of thesis shall remain same as applicable on him/her before the cancellation of his/her registration. For all other rules, the scholar is to abide by regulations and amendments made in regulations time to time.

18/09/17
(Dr Vinod Kumar)
Member

18/9/17
(Prof Mahesh Pal)
Member

18-9-17
(Prof. Jitender Kumar Chhabra)
Chairman

Item 31.16 To note the approval accorded by the Chairman, Senate for starting new scheme and syllabi for M.Tech. (REE) programme from the academic session 2017-18.

The Chairman, Senate accorded the approval for new scheme and syllabi of M.Tech. (REE) programme proposed by the Coordinator, School of Renewable Energy and Efficiency through its Board of Studies (meeting held on 17th June 2017) from the session 2017-18.

A notification in this regard was issued vide Ref. No. Acad./2017/425 dated 14/17.7.2017.

Approval of the Chairman Senate and notification are enclosed. (pages **165** to **215**).

The Senate may kindly note the approval accorded by the Chairman, Senate.

OFFICE OF THE DEAN (ACADEMIC)
NATIONAL INSTITUTE OF TECHNOLOGY KURUKSHETRA

No. Acad./2017/ 425 Dated: 14.7.2017

The approval of the Chairman, Senate & Director is hereby conveyed for new scheme and syllabi for M.Tech., School of Renewable Energy and Efficiency (REE). The new scheme shall be effective from the session 2017-18.

14.07.17
Dean (Academic)

Coordinator, School of Renewable Energy & Efficiency

Copy to:

Sr. Secretary to Director for kind information of the Director. 17/7/17

17/7/17

Dated 4.7.2017

The Coordinator, School of Renewable Energy and Efficiency through its Board of Studies (meeting held on 17th June 2017) has proposed the new scheme and syllabi for M.Tech. (RES) programme. The new scheme is to be effective from the session 2017-18.

In anticipation of the approval of the Senate, the approval of the Chairman, Senate may kindly be accorded so that the scheme and syllabi can be enforced w.e.f. session commencing July 2017.

Submitted for approval, please.

5/7/17

04.07.2017
Dean (Academic)

'R'

Chairman, Senate & Director
NIT, Kurukshetra

12/7/17

'R' 12/7/17

Dean (Acad)

13.07.17

SCHOOL OF RENEWABLE ENERGY & EFFICIENCY
NATIONAL INSTIUTE OF TECHNOLOGY KURUKSHETRA

No. SREE/2017/299 **Dated: 12/06/2017**

Sub: BOS Meeting to be held on 17/06/2017 at 11:00 AM

It is for the information of all concerned that BOS Meeting of the School of Renewable Energy and Efficiency is scheduled to be held on 17/06/2017 at 11:00 AM in the Conference Room of Mechanical Engineering Department. The draft of the Scheme and Syllabi of M.Tech. (RES) to be offered from academic session 2017-18 is also enclosed.

The agenda of the meeting is as under:

1. To approve the Scheme and Syllabi of M.Tech. (RES) to be offered from academic session 2017-18.
2. Any other item with the permission of Chair.

12.06.2017

(Prof. Hari Singh)
Coordinator

All BOS Members

Copy to:

1. Sr. Secretary to director for kind information of Hon'ble Director
2. Dean (Academic)
3. D.R. (Accounts) for settling TA/DA Bills of External Experts

SCHOOL OF RENEWABLE ENERGY AND EFFICIENCY
NATIONAL INSTITUTE OF TECHNOLOGY KURUKSHETRA

No. SREE/2017/309 Date: 27/06/2017

Minutes of Meeting of BOS held on 17/06/2017

The following were present in the Meeting:

1. Prof. Hari Singh, Coordinator
2. Dr. (Mrs.) Shelly Vadhera, Co-coordinator
3. Dr. Gulshan Sachdeva, Department of Mechanical Engineering
4. Dr. Avadhesh Yadav, Department of Mechanical Engineering
5. Dr. Jayaram Nakka, Department of Electrical Engineering
6. Prof. Pramod Agarwal Department of Electrical Engineering, IIT Roorkee
7. Prof. Jyotirmay Mathur, Department of Mechanical Engineering, MNIT Jaipur

The Coordinator welcomed the BOS members.

Item 1: Scheme and Syllabi of M.Tech. (RES) to be offered from academic session 2017-18 has been approved. The minutes were confirmed by the members.

The Meeting ended with a vote of thanks to the chair.

27.06.2017

(Prof. Hari Singh)
Coordinator

All BOS Members

SCHOOL OF RENEWABLE ENERGY AND EFFICIENCY
NATIONAL INSTITUTE OF TECHNOLOGY KURUKSHETRA

No. SREE/2017/ 310 **Date: 27/06/2017**

Subject: Agenda item for Senate / SCSA Meeting for the approval of Scheme and Syllabi of M.Tech. (RES) to be offered from academic session 2017-18

The BOS meeting of the School of Renewable Energy and Efficiency (SREE) was held on 17/06/2017 to approve the Scheme and Syllabi of M.Tech.(RES) to be offered from academic session 2017-18. Copy of the minutes of BOS meeting is enclosed herewith. The approved Scheme and Syllabi of M.Tech (RES) to be offered from the coming session is also enclosed. It is requested to get the Scheme and Syllabi approved from the Senate / SCSA so that the revised Scheme and Syllabi may be introduced from the academic session 2017-18.

27.06.2017
(Prof. Hari Singh)
Coordinator

Dean (Academic)

Enclosures:

1. Copy of minutes of BOS meeting held on 17/06/2017
2. Approved Scheme & Syllabi of M.Tech (RES)

MASTER OF TECHNOLOGY
in

RENEWABLE ENERGY SYSTEMS

Scheme & Syllabi

w. e. f. 2017-18

School of Renewable Energy and Efficiency
National Institute of Technology, Kurukshetra

SCHOOL OF RENEWABLE ENERGY AND EFFICIENCY
NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA

MASTER OF TECHNOLOGY (RENEWABLE ENERGY SYSTEMS)
w.e.f. 2017-18

FIRST SEMESTER

Course No.	Title				Credit Point
		Lectures	Practical	Total	
SRE501T	Renewable Energy Sources	3	-	3	3
SRE 503T	Solar Thermal Systems	3	-	3	3
SRE 505T	Power Electronics & Control	3	-	3	3
SRE 51XT	Elective-I	3	-	3	3
SRE 52XT	Elective-II	3	-	3	3
SRE 507P	Seminar / NPTEL-I	-	2	2	1
SRE 509P	Energy Lab-I	-	4	4	2
	Total	**15**	**06**	**21**	**18**

Weightage for Theory Courses:
During Semester Evaluation Weightage – 50%
End Semester Examination Weightage – 50%
Weightage for Lab. Courses:
During Semester Evaluation Weightage – 60%
End Semester Examination Weightage – 40%

* **Industrial Visits:** Minimum One.
* **Invited Talks:** Minimum One.

List of Electives (Any two electives are to be offered, selecting one from each group).

Elective I		
Sr. No.	**Course No.**	**Title**
1.	SRE 511T	Small Hydro Power Plants
2.	SRE 513T	Design of Experiments
3.	SRE 515T	Optimization Techniques
Elective II		
Sr. No.	**Course No.**	**Title**
1.	SRE 521 T	Life Cycle Assessment of Renewable Systems
2.	SRE 523 T	Converters For Renewable Energy Systems
3.	SRE 525 T	Power System Operation & Control
4.	SRE 527 T	Energy Storage

17/6/17 17/6/17 17/6/17 17/6/17

SCHOOL OF RENEWABLE ENERGY AND EFFICIENCY
NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA

MASTER OF TECHNOLOGY (RENEWABLE ENERGY SYSTEMS)
w.e.f. 2017-18

SECOND SEMESTER

Course No.	Title				Credit Point
		Lectures	Practical	Total	
SRE502T	Solar Photovoltaic Systems	3	-	3	3
SRE 504T	Wind Energy	3	-	3	3
SRE 506T	Renewable Energy: Policies, Planning & Audit	3	-	3	3
SRE 51XT	Elective-I	3	-	3	3
SRE 52XT	Elective-II	3	-	3	3
SRE 508P	Seminar / NPTEL-II	-	2	2	1
SRE 510P	Energy Lab-II	-	4	4	2
	Total	**15**	**06**	**20**	**18**

Weightage for Theory Courses:
During Semester Evaluation Weightage – 50%
End Semester Examination Weightage – 50%
Weightage for Lab./ Project Courses:
During Semester Evaluation Weightage – 60%
End Semester Examination Weightage – 40%

* **Industrial Visits:** Minimum One.
* **Invited Talks:** Minimum One.

List of Electives (Any three electives are to be offered, selecting one from each group).

Elective I		
Sr. No.	**Course No.**	**Title**
1.	SRE 512T	Computational Fluid Dynamics
2.	SRE 514T	Solar Refrigeration & Air-conditioning
3.	SRE 516T	Smart Grid
4.	SRE 518T	Power Quality
Elective II		
Sr. No.	**Course No.**	**Title**
1.	SRE 522T	Bio- Energy Technologies
2.	SRE 524T	Sustainable Buildings
1.	SRE 526T	Fuel Cell Technologies
2.	SRE 528T	Hybrid Electric Vehicles

17/6/17 17/6/17 17/6/17 17/06/17 19/6/17

THIRD SEMESTER

Course No.	Title	Schedule of Teaching				Credit Point
		Lecture	Tutorial	Practical	Total	
SRE 531 P	Preparatory Work for Dissertation	0	0	20	20	10
					20	10

NOTE: The preparatory work for Dissertation shall be evaluated by a committee comprising the following (on the basis of one mid semester seminar and one end semester seminar presented and one end semester report submitted by the candidate).

1. Coordinator or faculty nominee proposed by the Coordinator
2. Dissertation Supervisor(s)
3. Two senior most faculty members of the department (as per strength)

FOURTH SEMESTER

Course No.	Title	Schedule of Teaching				Credit Point
		Lecture	Tutorial	Practical	Total	
SRE 532P	Dissertation	0	0	32	32	16
					32	16

NOTE:

i) The Dissertation shall be evaluated by a committee comprising the following through presentation cum viva-voce examination
   1. Coordinator or faculty nominee proposed by the Coordinator
   2. Dissertation Supervisor(s)
   3. One external expert appointed by the school

ii) For award of grade, following criteria to be used

Grade	Conditions to be fulfilled
A+	One paper accepted/published in SCI Journal
A	One good quality paper accepted/published in non-paid journal or two good quality papers presented in International/National Conference.*
B	One good quality paper presented in International Conference
C/D	In other cases

* Conference organized by IIT/NIT/Premier R & D organization

Non-Credit Based Dissertation Evaluation

Course Code	:	SRE 501 T
Course Title	:	Renewable Energy Sources
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PC

Course Learning Objectives

- To provide knowledge of solar energy concept and applications.
- To impart knowledge of geothermal, ocean and tidal energy and their applications.
- To understand the design of wind mills and applications.
- To understand the turbines and generators for small scale hydroelectric generation.
- To understand the important parts of a biogas plant, design and principle of bio-diesel.

Course Contents

Unit-I

Energy Related Environmental Problems and Renewable Energy Technologies

Acid rain, ozone layer depletion, global climate change, history of solar energy, introduction and scope of solar energy, solar collectors and its applications, introduction and scope of bio energy, biogas, bio fuels and its applications, introduction to wind energy, wind energy potential in India and world, wind farms and mills & their applications, small scale hydroelectric, classification of small hydro power stations, advantages and limitations of small scale hydro-electric.

Unit-II

Geothermal and Oceans Energy

Potential sites, estimations of geothermal power, nature of geothermal sites, hot-dry rocks resources, magma resources, systems for energy generation, applications of geothermal energy, environmental issues, basic theory of ocean thermal energy conversion, potential and application of technologies, basic theory of wave energy, potential and technologies, basic theory of tidal energy, potential and technologies, methods of ocean thermal electric power generation.

Unit-III

M.H.D. Generator and Thermoelectric Generators

Introduction, Principle of working, different types of M.H.D. generators, M.H.D. materials, M.H.D. power generation systems, economic aspects of M.H.D. generation.

Introduction, thermoelectric effects, thermoelectric generator, types of thermoelectric generators, economic aspects of thermoelectric generation.

Unit-IV

Fuel Cells and Hydrogen Energy

Introduction, principle of fuel cells, thermodynamic analysis of fuel cells, types of fuel cells, fuel cell batteries, applications of fuel cells.

Hydrogen as a renewable energy source, sources of hydrogen, fuel for vehicles, hydrogen production- direct electrolysis of water, thermal decomposition of water, biological and biochemical methods of hydrogen production.

Reference Books

1. Twidell & A. W. Wier, *Renewable energy resources*, English Language book, Society I E & F N Spon (1986).
2. N. K. Bansal, M. Kleeman & M. Mielee, *Renewable Conversion Technology*, Tata Mc Graw Hill, New Delhi.
3. T. John and W. Tony, *Renewable Energy Resources*, Taylor & Francis.

Course Outcomes

At the end of the course student will be able to

- Get the knowledge of solar concepts, solar collector and solar desalination.
- Get the knowledge of geothermal applications, energy generation, power generation by tidal energy.
- Get the knowledge of design of wind mills and energy estimations and also wind energy applications.
- Get the knowledge the turbines and generators for small scale hydroelectric generation and advantages and limitations of small scale hydro-electric.
- Get the knowledge of design of bio gas plant and bio diesel applications.

Course Code	:	SRE 502 T
Course Title	:	Solar Photovoltaic
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PC

Course Learning Objectives

- Understand about the solar PV systems.
- Understand the fundamentals of solar PV power plants.
- Gain knowledge about the PV system design.

Course Contents

Unit-I

Solar PV Systems

Fundamentals of solar cell, semiconductors as basis for solar cells materials and properties, P-N junction, sources of losses and prevention, estimating power and energy demand, site selection, land requirements, choice of modules, economic comparison, balance of systems. Overview of different types of solar cells/panels, photovoltaic industries in India and world.

Unit-II

Solar PV Power Plants

Array design, inverter types and characteristics, power conditioning system: working algorithms, performance analysis; design of stand alone, hybrid and grid interactive plants, commissioning of solar PV plant.

Unit-III

Off-Grid and On-Grid PV Applications

Introduction, commonly used off-grid PV products, grid-connected rooftop solar power plant, solar net-metering.

Unit-IV

PV System Design Considerations

Introduction, design and structure concept, current-voltage characteristics, sizing of PV system, cost of PV system.

Reference Books

1. Suneel Deambi , *Photovoltaic System Design: Procedures, Tools and Applications*, CRC Press 2016.
2. A. Freundlich, P. Verlinden, Wvan Sark, *Photovoltaic Solar Energy: From Fundamentals to Applications*, John Wiley & Sons Ltd. 2017.
3. Md. Rabiul Islam, Faz Rahman, Wei Xu, *Advances in Solar Photovoltaic Power Plants*, Springer-Verlag Berlin Heidelberg, 2016.

Course Outcomes

At the end of the course student will be able to

- Understand the fundamental of photovoltaic systems.
- Apply the knowledge of off-grid and on- grid systems.

Course Code	:	SRE 503 T
Course Title	:	Solar Thermal Systems
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PC

Course Learning Objectives

- To understand the sun earth relationship.
- To design concentrating and non concentrating type solar thermal systems.
- To understand the fundamentals of thermal energy storage.

Course Contents

Unit-I

Solar Radiation

Location on earth, celestial sphere, horizon and equatorial system, description of the various angles depicting the relation between sun and earth, coordinates transformation, solar time, obliquity and declination of the sun, apparent motion of the sun, sun rise and sun set time, east west time, analysis of the direct daily solar radiation on any arbitrarily located surface, numerical problems.

Unit-II

Flat Plate Collectors

Performance analysis, transmissivity of the cover system, overall loss coefficient and heat transfer correlations, collector efficiency factor, collector heat removal factor, effects of various parameters on the performance.

Evacuated Tube Collectors

Principle of working, advantages of ETC over FPC, Types of evacuated tubes, Thermal Analysis.

Unit-III

Concentrating Collectors

Methods of classification, description of cylindrical parabolic collector, orientation and tracking modes, performance analysis, overall loss coefficient and heat transfer correlations, parametric study of collector performance in different modes of operation, compound parabolic collector geometry, tracking requirements, parabolic dish collector.

Thermal Energy Storage

Introduction, sensible heat storage: liquids, solids, analysis of liquid storage tank in well mixed condition and thermal stratification, analysis of packed-bed storage, latent heat storage, thermo chemical storage.

Unit-IV

Solar Pond

Introduction, description of solar pond, transmissivity of the system, temperature distribution and collection efficiency, experimental studies.

Solar Thermal Power Generation:

Introduction, parabolic trough systems, heliostat System, central receiver system.

Reference Books

1. G.N. Tiwari and S. Suneja, *Solar Thermal Engineering Systems*, Narosa Publishers.
2. S.P. Sukhatme, *Solar Energy*, Tata McGrew Hill Company Ltd., New Delhi.
3. H.P. Garg, *Advancment in Solar Energy Technology*, D. Reidel Publishing Co.
4. H. P. Garg, *Solar Thermal Energy Storage*, D. Reidel Publishing Company (1985).
5. C. Julian Chen, *Physics of Solar Energy*, John Wiley and Sons.

Course Outcomes

At the end of the course student will be able to

- Understand the tracking requirements of the thermal solar systems.
- Design and analyse the solar collectors.
- Understand the concept of solar pond and thermal power generation systems.

Course Code	:	SRE 504 T
Course Title	:	Wind Energy
Number of Credits	:	03
Prerequisites (Course code)	:	
Course Type	:	PC

Course Learning Objectives

- To impart understanding of various basic aspects related to wind energy power generation systems and technology.

Course Contents

Unit-I

Introduction

Historical developments of Wind Energy, energy and power in wind, wind energy dynamics, power extracted, axial thrust on turbines, torque, maximum power and Betz coefficient, wind turbine operational characteristic, site selection. Wind energy conversion system, basic integration issues related to wind power, status of Wind power in India.

Unit-II

Construction of Wind Turbines

HAWT and VAWT constructions, basic rotor differences, relative merits and operational difficulties, lift and drag turbines, upwind and down wind machines.

Unit-III

Wind Energy Conversion Systems (WECS)

Basic components, fixed and variable speeds systems, type of generators used-D.C., induction and synchronous machines; grid, standalone, and hybrid schemes.

Unit-IV

Power Quality and Stability of Wind Energy

Power electronics based controllers used with WECS, power quality, impact of constant and variable speed wind turbines on transient stability of power system, wind system economic components, economic analysis methods, cost of on-shore and off-shore wind turbines.

Reference Books

1. V. Yaramasu and B.Wu, *Model Predictive Control of Wind Energy Conversion Systems*. Wiley- IEEE Press, 2016.
2. E. W. Golding, *The Generation of Electricity by Wind farms*, E & F. N. Spon Ltd, London, (U.K). 1976.
3. C. G. Justus, *Winds and Systems Performance*, Franklin Institute Press, Philadelphia (USA) 1978.

4. L. Gary, Johnson, *Wind Energy System*, Prentice Hall Inc. Englewood Cliffs. N. J. (USA) 1985.
5. L. L. Freris, *Wind Energy Conversion System*, Prentice Hall, (U.K.) 1990.
6. Thomas Ackermann, *Wind Power in Power System*, John Wiley & Sons Ltd., 2005.
7. S. Heier, *Grid Integration of Wind Energy Conversion Systems*. Wiley, New York (USA).

Course Outcomes

At the end of the course student will be able to

- Ability to differentiate types of wind energy conversion systems.
- Status of wind energy in India.
- Various aspects of selection of wind energy sites.

Course Code	:	SRE 505 T
Course Title	:	Power Electronics and Control
Number of Credits	:	03
Prerequisites (Course Code)	:	Nil
Course Type	:	

Course Learning Objectives

- This give an introduction to the recent developments of power electronics from components, topology and control techniques.
- This course drives on the application requirements of power electronics.
- This is a higher level of subject that will help to work in demanding areas of power electronics in renewable energy systems

Course Contents

Unit 1

Introduction

Principle of SCR, MOSFET & IGBT and their characteristics, dv/dt & di/dt protection, snubber circuit, SCR commutation circuits, Need of series & parallal connections, Numerical.

Unit 2

Rectifiers

Single phase uncontrolled & controlled rectifiers and their analysis, Three phase controlled rectifiers and their analysis, Analysis with various loads in all case, Numerical.

Unit 3

Inverters

Single phase Voltage Source Inverters, Principle of operation of single-phase full bridge VSIs and their analysis, Three-phase bridge inverter with 120^0 and 180^0 modes of operation, PWM Techniques and their performance, Numerical.

Unit 4

DC Converters and case studies

Principle of operation of DC buck, boost & buck-boost converters, PWM rectifiers, Simple closed loop Renewable Energy conversion system, Numerical.

Reference Books

1. G. K. Dubey, S. R. Doradla, A. Joshi and R. M. K. Sinha, *Thyristorised Power Controllers*, New Age International Private Limited. 2008
2. N. Mohan, T. M. Undeland and W. P. Robbins, *Power Electronics Converters, Applications and Design*, 3rd 2008 Ed., Wiley India.
3. M. H. Rashid, *Power Electronics Circuits Devices and Applications*, 3rd 2008 Ed Pearson Education.
4. C. W. Lander, *Power Electronics*, 3rd Ed., McGraw-Hill 2007 International Book Company.
5. R. S. Ramshaw, *Power Electronics Semiconductor Switches*, 1993 Chapman & Hall.
6. Bin Wu, *High-Power Converters and AC Drives*, IEEE Press, A John Wiley & Sons, Inc Publication, New York, 2006.

Course Outcomes

At the end of the course student will be able to

- To know characteristics of various devices.
- Knowledge about rectifiers , inverters & converters

Course Code	:	SRE 506 T
Course Title	:	Renewable Energy: Policies, Planning & Audit
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PC

Course Learning Objectives

- To become familiar with electricity sector and its planning.
- To become familiar with the policies and regulations of renewable energy systems.
- To study energy auditing at various stages of an electrical system.
- To study planning procedures and financing of renewable energy projects.
- To impart knowledge regarding development issues of renewable energy sector in our country.

Course Contents

Unit-I

Energy Policies

International energy policies, Impact of energy on economy, energy and environmental policies, energy policy issues: fossil fuels, renewable energy, energy strategy for future, energy conservation act, electricity act & its features.

Unit-II

Energy Planning

General power system, overview of generation, transmission and distribution, planning issues, generation, substation and network expansion planning, reactive power planning, power system planning under uncertainty, risk based power system planning.

Unit-III

Economics

Financial feasibility evaluation of renewable energy technologies, social cost - benefit analysis of renewable energy technologies, fiscal, financial and other incentives for promotion of renewable energy systems and their effect on financial and economic viability, electricity tariff types.

Unit-IV

Energy Auditing & Management

Energy auditing: types and objectives, reactive power management: capacitor sizing, degree of compensation, capacitor losses, location, placement, and maintenance. efficient lighting management: energy efficient light sources, energy conservation in lighting schemes. Energy conservation management.

Course Code	:	SRE 506 T
Course Title	:	Renewable Energy: Policies, Planning & Audit
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PC

Course Learning Objectives

- To become familiar with electricity sector and its planning.
- To become familiar with the policies and regulations of renewable energy systems.
- To study energy auditing at various stages of an electrical system.
- To study planning procedures and financing of renewable energy projects.
- To impart knowledge regarding development issues of renewable energy sector in our country.

Course Contents

Unit-I

Energy Policies

International energy policies, Impact of energy on economy, energy and environmental policies, energy policy issues: fossil fuels, renewable energy, energy strategy for future, energy conservation act, electricity act & its features.

Unit-II

Energy Planning

General power system, overview of generation, transmission and distribution, planning issues, generation, substation and network expansion planning, reactive power planning, power system planning under uncertainty, risk based power system planning.

Unit-III

Economics

Financial feasibility evaluation of renewable energy technologies, social cost - benefit analysis of renewable energy technologies, fiscal, financial and other incentives for promotion of renewable energy systems and their effect on financial and economic viability, electricity tariff types.

Unit-IV

Energy Auditing & Management

Energy auditing: types and objectives, reactive power management: capacitor sizing, degree of compensation, capacitor losses, location, placement, and maintenance. efficient lighting management: energy efficient light sources, energy conservation in lighting schemes. Energy conservation management.

Reference Books

1. B.V. Desai, *Energy Policy*, Wiley Eastern.
2. A. S. Pabla, *Electrical Power Systems Planning*, McMillan Publishers, India, 1998.
3. C. Wayne, Turner, *Energy Management /Handbook, Lilburn*, The Fairmont Press, 2001.
4. Albert Thumann, *Handbook of Energy Audits*, Fairmont Press 5th Edition (1998).
5. G. Mankiw, *Principle of Economics*, 6th Edition.
6. M. Munasinghe and P. Meier, *Energy Policy Analysis and Modelling*, Cambridge Press, 1993.

Course Outcomes

At the end of the course student will be able to

- Familiar with electrical sector markets and models.
- Understand the regulations and policies of renewable energy systems.
- Know the techniques for energy auditing at various stages of electrical systems.
- Familiar with financing issues of renewable energy projects.

Course Code	:	SRE 511 T
Course Title	:	Small Hydro Power Plant
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- Understand the fundamentals of small hydro power plant.
- Overall development of small hydro power plant.
- Gain knowledge about the various types of generators & hydraulic turbines.

Course Contents

Unit-I

Introduction

Necessity and importance of harnessing small hydro power, Status of small hydro power plant worldwide, advantages and disadvantages of small hydro power plant, operational terminology, legal requirements, national policies, laws and related economics.

Unit-II

Small Hydro Power Plant Development

Classification of hydropower plants, working principle & site selection of a small hydro power plant, run-of-the-river and storage schemes; power channels, desalting arrangements, forebay tank and balancing reservoir, penstock and power house different types of project reports and their relevance; different methods of project implementation.

Unit-III

Generators

Types of generator: synchronous and induction, sizing and specification of single and three phase generators, power factor and its correction methodologies, excitation systems; electro-mechanical and digital governor, electronic load controller, types of relays, contactors and control schemes for small hydro power stations.

Unit-IV

Hydraulic Turbines

Classification and working principles of hydro turbines, different components of impulse and reaction turbines; design concepts of hydro turbines, non conventional hydro turbines; characteristics of hydro turbines, selection of hydro turbines based on specific speed and their optimal selection.

Reference Books

1. D. Reimert, *Protective Relaying for Power Generation Systems*, Taylor and Francis.
2. D. M. Clemen , *Hydro Plant Electrical Systems*, HCI Publication.
3. A. Harvey, A. Brown, and P. Hettiarachi, *Micro Hydro Design Manual*, Intermediate Technology.
4. J. J. Fritz. *Small and Mini Hydro Power Systems: Resource Assessment and Project Feasibility*, McGraw Hills.
5. Gulliver, J. S. and Arndt, E.A., *Handbook of Hydro Electric Engineering*, McGraw Hills.
6. M. L. Kausal, and G. Chauhan , *Planning and Design of Small Hydroelectric Projects*, (Publication No. 305), Central Board of Irrigation and Power.
7. *Guidelines to Develop Small Hydropower Plants*, ESHA.

Course Outcomes

At the end of course student will be able to

- Understand the overall development of small hydro power plant.
- Know the application of generators, excitation systems, load controllers, relays for small hydro power plant.
- Understand the working of various hydraulic turbines.

Course Code	:	SRE 512 T
Course Title	:	Computational Fluid Dynamics
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- To be able to understand the concepts of PDEs, their application to CFD problems and fundamentals of discretization.
- To be able to solve problems related to heat transfer and fluid flow using Finite difference and finite volume methods.
- To be able to understand the limitations and errors involved in solution to CFD problems.

Course Contents

Unit- I

Introduction

Introduction to C.F.D., models of the flow, governing differential equations – continuity equation, momentum equation, energy equation, Nervier- Stokes equation, physical boundary conditions.

Unit- II

Mathematical Behaviour of Governing Equation

Classification of quasi linear partial differential equation, general method of determining the classification of partial differential equation, hyperbolic, parabolic, elliptic equations.

Discretization Methods

Finite difference methods, difference equations, explicit & implicit approach, errors & analysis of stability, basics of finite control volume method.

Unit- III

Heat Conduction Problem

Solution of one dimensional heat conduction through a pin, solution of two dimensional steady state and transient heat conduction problems, heat conduction problems in cylindrical coordinates: axisymmetric and non-axisymmetric problems.

Heat Conduction With Convection & Diffusion

Steady state one dimensional convection and diffusion, upwinding, exact solution, exponential scheme, hybrid scheme, power law scheme, discretization equation for two dimensions & three dimensions, false diffusion.

Unit- IV

Fluid Flow Problem

Viscous incompressible flow, solution of the couette flow problem by F.D.M., calculation of the flow field using stream function – vorticity method numerical algorithms for solving complete Navier-Stokes equation – MAC method; SIMPLE method.

Reference Books

1. Suhas. V. Patankar, *Numerical Heat Transfer and Fluid Flow*, Hemisphere
2. John. D. Anderson, Jr, *Computational Fluid Dynamics*, Mc Graw Hill
3. Anil W. Date, *Introduction to Computational Fluid Dynamics*, Cambridge University Press
4. Niyogi, Chakraborty and Laha, *Introduction to Computational Fluid Dynamics*, Pearson Education.

Course Outcomes

At the end of the course student will be able to

- Understand the concepts of PDEs, their application to CFD problems and fundamentals of discretization.
- Solve problems related to heat transfer and fluid flow using finite difference and finite volume methods.
- To understand the limitations and errors involved in solution to CFD problems.

Course Code	:	SRE 513 T
Course Title	:	Design of Experiments
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course learning Objectives

- To introduce the concept of undertaking experimental work.
- To expose students to different types of experimental designs.

Unit I

Introduction

Objectives for experimental designs. Basic design concepts. Steps for the design of experiments. Types of experimental designs, Analysis of means, Experimental designs and six sigma.

Unit II

Completely Randomized Design

Model for a completely randomized design with a single factor. ANOM for a completely randomized design, ANOM with unequal variances, randomized block design, incomplete block designs, latin square design, Graeco – Latin square design.

Unit III

Full Factorial and Fractional Factorial Designs with Two Levels

Nature of factorial designs. deleterious effects of interactions. Effect estimates. the 2^3 Design. built-in –replication. role of expected mean squares in experimental design, 2^{k-1} Designs. Effect estimates and regression coefficients, 2^{k-2} Designs. basic concepts; design efficiency, John's 3/4 designs.

Unit IV

Robust Design

DOE and Taguchi approach; experimental design using orthogonal arrays; experimental design with two-level factors only; experimental designs with three and four level factors; A ANOV ; analysis using signal- to- noise ratios; some case studies; QT4 software; response surface methodology; response surface experimentation; process improvement wirh steepest ascent; analysis of second – order response surfaces; central composite designs; box – behnken designs; analyzing the fitted surface; design-expert software.

Reference Books

1. Thomas P. Ryan John Wiley, *Modern Experimental Design*.
2. Myers R. H, Montgomery D. C. John Wiley Response *Surface Methodology*.
3. Ranjit K. Roy, John Wiley, *Design of Experiments Using the Taguchi Approach* .

Course Outcomes

At the end of the course, student will be able to

- Become capable to understand experimental investigation in any field of engineering.
- Learn effectively Robust Design Techniques like Taguchi Methods & RSM for solving all kinds of Industrial problems.

Course Code	:	SRE 514 T
Course Title	:	Solar Refrigeration and Air Conditioning
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- To provide understanding of fundamental concepts of refrigeration and air conditions.
- To provide fundamental knowledge desiccant material and desiccant air conditioning systems.
- To provide understanding of fundamental concepts the adsorption refrigeration system.
- To understand the design of solar powered absorption refrigeration system and its applications.

Course Contents

Unit-I

Introduction

Basics of refrigeration and air conditioning, comfort zones, potential and scope of solar cooling and heating, fundamentals of conventional vapour compression system and vapour absorption system. solar cooling technology: solar electrical cooling, solar thermal cooling:- open cycles (liquid and solid desiccant system), closed cycle (absorption cycle, adsorption cycle, solar radiation cooling), thermo mechanical systems, steam ejector cycle, solar combined power/cooling.

Unit-II

Desiccant Air Conditioning

Desiccant materials, classification of desiccant material, fundamentals of desiccant material: adsorption process, regeneration process, adsorption rate, regeneration rate, factor affecting adsorption and regeneration of desiccant material, heating/humidification, cooling/dehumidification, desiccant dehumidifiers: desiccant bed, desiccant wheel, desiccant coated heat exchanger, solar powered desiccant air conditioning system.

Unit-III

Adsorption Refrigeration System

Introduction, principle of adsorption, thermodynamics of adsorption cycles: - basic adsorption cycle, heat recovery adsorption refrigeration cycle, mass recovery adsorption refrigeration cycle, thermal wave cycle, convective thermal wave cycle, intermittent adsorption systems: silica-gel/water and silica-gel methanol systems, zeolite–water systems, activated carbon–methanol systems, activated carbon–ammonia systems.

Unit-IV

Absorption Refrigeration System

Absorption cycle of operation, maximum, COP, properties of solution, aqua-ammonia solution, simple absorption system, h-x diagram, ammonia enrichment process and water - lithium bromide refrigeration system, single-effect solar absorption cycle, half-effect solar absorption cooling system, double-effect solar-assisted absorption cooling systems, diffusion absorption solar cooling system, hybrid solar absorption cooling systems.

Reference Books

1. G. Rogerio Oliveira and Centro De Alegrete, *Solar Powered Sorption Refrigeration and Air Conditioning*, Nova Publishers.
2. J. C. MC Veigh and A. A. M. Sayigh, *Solar Air Conditioning and Refrigeration*, Pergamon.

Course Outcomes

At the end of the course student will be able to

- Get the knowledge of vapor compression and vapor absorption system.
- Get the knowledge of desiccant air conditioning systems.
- Get the knowledge of design of adsorption refrigeration system.
- Get the knowledge of absorption refrigeration system.

Course Code	:	SRE 515 T
Course Title	:	Optimization Techniques
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- Understand the fundamental concepts of optimization techniques.

Understand the advantages and limitations associated with the large-scale optimization techniques when applied to engineering problems.

- Implement selected optimization techniques for constrained and unconstrained problems in both single and multivariable commonly occurring in engineering systems and other specific areas.

Course Contents

Unit-I

Introduction

Introduction to optimization theory, importance in solving system engineering problems, convex sets & functions, supporting & separating hyper planes, dual cones and generalized inequalities, multi objective optimization.

Unit-II

Linear Programming

Linear programming problem: Formulation, simplex method, two phase simplex method, dual simplex method, duality in linear programming, sensitivity analysis, Integer linear programming, cutting plane method, linear programming approach to game theory, dynamic programming problems.

Unit-III

Nonlinear Programming

Introduction to nonlinear programming: unconstrained optimization—formulation of quadratic optimization problem, Newton raphson method, gradient method, constrained optimization—quadratic programming, separable programming.

Unit-IV

Convex Optimization

Convex optimization problem: linear optimization problem, quadratic optimization problem, complexity of convex programming.

Reference Books

1. S. S. Rao, *Optimization Theory & Application*, Wiley Eastern Ltd.
2. Boyd & Vandenberghe , *Convex Optimization*, Cambridge University Press.
3. A. Taha Hamdy, *Operational Research : An Introduction*, Pearson Prentice Hall, New Jersey.
4. D. Bertsekas , *Nonlinear Programming*, Athena Scientific, Nashua, USA.
5. V. Chvatal, *Linear Programming* ,W. H. Freeman, New York.
6. R. Fletcher, *Practical Methods of Optimization*, Wiley, New York.

Course Outcomes

After the successful completion of the course, the students will be able to

- Understand the different optimization algorithms, multidisciplinary design optimization.
- Formulate optimization problems, given the description of a real problem.
- Understand and apply the concept of optimality criteria for various types of optimization problems in different areas of engineering.
- Solve various constrained and unconstrained problems in single variable as well as multivariable.
- Utilize the optimization techniques in real life situations.

Course Code	:	SRE 516 T
Course Title	:	Smart Grid
Number of Credits		03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- Understand about the smart grid and emerging technologies.
- Understand about the Smart Metering.
- Learn the technologies that are required for the realization of smart grid.

Course Contents

Unit-I

Introduction

Early smart grid initiatives, overview of the technologies required for the smart grid, information security for the smart grid.

Unit-II

Smart Grid

Introduction to grid connectivity of RE systems, smart grid and emerging technologies, operating principles and models of smart gird components, key technologies for generation, networks, loads and their control capabilities; decision-making tools.

Unit-III

Smart Metering

Introduction, evolution of electricity metering, key components of smart metering, overview of the hardware used for smart meters, smart metering protocols.

Unit-IV

Distribution Management Systems

Structure and main components of a distribution management system, SCADA, distribution system modeling, new trends for smart grids, topology analysis, power flow analysis.

Reference Books:

1. Nick Jenkins, Janaka Ekanayake, [et al.] *Smart Grid Technology And Applications*, Wiley India Ltd.
2. Ali Keyhani, Muhammad Marwali, *Smart Power Grids 2011*, Springer-Verlag Berlin Heidelberg 2012.
3. Ali Keyhani, *Design of Smart Power Grid Renewable Energy Systems*, Wiley-IEEE Press 2016.

Course Outcomes

At the end of the course student will be able to

- Understand the fundamental of Smart grid.
- Understand the concept of Distribution management system.
- Understand the fundamental of Smart metering.

Course Code	:	SRE 518 T
Course Title	:	Power Quality
Number of Credits	:	03
Prerequisites (Course Code)	:	Power Systems, Power Electronics & Signals and Systems.
Course Type	:	PE

Course Learning Objectives

- To understand the various power quality phenomenon, their origin and monitoring and mitigation methods.
- To understand the effects of various power quality phenomenon in various equipment.

Course Contents

Unit-I

Introduction

Electric power quality phenomena IEC and IEEE definitions , power quality disturbances, voltage fluctuations , transients , unbalance ,waveform distortion , power frequency variations.

Unit-II

Voltage Quality

Voltage variations , voltage sags and short interruptions , flicker-longer duration variations ,sources , range and impact on sensitive circuits , standards , solutions and mitigations , equipment and techniques.

Unit-III

Transients

Transients , origin and classifications , capacitor switching transient , lightning , load switching impact on users, protection, mitigation. harmonics , sources , definitions & standards , impacts calculation and simulation , harmonic power flow , mitigation and control techniques , filtering ,passive and active.

Unit-IV

Power Quality Conditioners

Power quality conditioners, shunt and series compensators, DSTATCOM , dynamic voltage restorer , unified power quality conditioners , Case studies.

Reference Books

1. G. T. Heydt, *Electric Power Quality*, Stars in a Circle Publications, Indiana, 2nd edition 1996.
2. M. H. J. Bollen, *Understanding Power Quality Problems, Voltage Sags and Interruptions*, IEEE Press, New York, 2000.
3. J. Arrillaga, Watson, N. R , S. Chen, *Power System Quality Assessment*, Wiley, New York, 2000.
4. R. C. Duagan, M. F. Mcgranaghan and H. W. Beaty, *Electric Power System Quality*, McGraw-Hill, 2001.
5. N. G. Hingorani and L. Gyugyi, *Understanding FACTS*, IEEE Press, Delhi, 2001.

Course Outcomes

At the end of the course student will be able to

- Power quality and the compensation techniques.
- Recognize recent developments in design aspects of renewable power conversion systems.

Course Code	:	SRE 521 T
Course Title	:	Life Cycle Assessment of Renewable Systems
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- To be able to understand the characteristics of life cycle assessment.
- To be able to understand the risk and life cycle framework for sustainability.
- To be able to understand the life cycle assessment of renewable energy sources.

Course Contents

Unit-I

Life Cycle Analyses

An introduction to sustainability concept and life cycle analyses, introduction to material flow and waste management, study of water resources and food nexus.

Main Characteristics of Life Cycle Assessment

What is LCA?, role of LCA in relation to products, role of LCA in wider applications, strength and limitations of LCA, LCA as part of a tool box, management of LCA projects.

Unit-II

Life Cycle Framework

Risk and life cycle framework for sustainability: introduction, risk, environmental risk assessment, example chemicals and health effects, character of environmental problems.

Unit-III

Life Cycle Assessment of Renewable Energy Sources

Life cycle assessment of biodiesel from palm oil, life-cycle assessment of bio methane from lignocelluloses biomass, application of life cycle assessment on agricultural production systems with reference to lignocelluloses biogas and bio ethanol production as transport fuels.

Unit-IV

Life Cycle Inventory and Impact Assessments

Life cycle inventory and impact assessments, unit processes and system boundary, data quality, procedure for life cycle impact assessment, LCIA in practice with examples, interpretation of LCIA results.

ISO Terminologies

Factors for good LCA study, ISO terminologies, LCA steps recap, chemical release and fate and transport, and green sustainable materials.

Reference Books

1. B. Jeroen, Guinee, *Hand Book on Life Cycle Assessment*, Kluwer Academic Publications.
2. K.Walter, *Background and Future Prospects in Life Cycle Assessment*, Springer.
3. Anoop Singh , *Life Cycle Assessment of Renewable Energy sources*, Springer.

Course Outcomes

At the end of the course student will be able to

- Understand the characteristics of life cycle assessment.
- Understand the risk and life cycle framework for sustainability.
- Understand the life cycle assessment of renewable energy sources.

Course Code	:	SRE 522 T
Course Title	:	Bio-Energy Technologies
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PC

Course Learning Objectives

- To provide knowledge of bio-energy and bio-gas.
- To impart knowledge of applications of bio-energy.
- To understand the working of bio-gas plant.
- To understand Bio-mass resource potential and assessment for energy generation.

Course Contents

Unit-I

Basics of Bio-Energy

Introduction to biogas, utility of biogas, chemical composition, properties of biomass, up gradation of biogas, different types of materials used for the production of biogas, size reduction, briquetting, drying, storage and handling of biomass.

Unit-II

Biomass and Bio-Fuels

Energy plantation, biogas generation, types of biogas plants, applications of biogas and energy from wastes, introduction to anaerobic digestion technology, different stages of production of biogas. characteristics of bio-diesel, materials and methods, and its applications, alcoholic fermentation process, technologies and its applications.

Unit-III

Operational Parameters

Different factors contribute the production of biogas like retention period, loading rate, temperature, carbon nitrogen (CN) ratio, acidity and alkalinity (PH), presence of toxic substances, kinetics and mechanism- high rate digesters for industrial waste water treatment.

Unit-IV

Biogas plant

Important parts of a biogas plant and designing a biogas plant. different categories of bio-gas plants like domestic, institutional and community. classification of biogas plants such as batch type, semi continues type and continuous type, incineration-processing for liquid fuel production.

Different Models

On a study about different models of biogas plants like fixed dome model, floating dome model, RCC digester with flexible gas collector, geo-membrane digester, tube digester, lagoon digester. portable biogas plants, pre-fabricated biogas plants and also the plants constructed at site.

Reference Books

1. K .M. Mital, *Biogas Systems: Principles and Applicationsby*, New Age Publishers.
2. A Chakraverthy, *Biotechnology and Alternative Technologies for Utilization of Biomass or Agricultural Wastes* by Oxford & IBH publishing Co, 1989.
3. R. S. Khoiyangbam, Navindu Gupta and Sushil Kumar, *Biogas Technology: Towards Sustainable Development*, The Energy and Resources Institute.
4. B. T. Nijaguna, *Biogas Technology*, New Age International Publishers.
5. Georg M. Guebitz, *Biogas Science and Technology*, Springer.
6. Brad Hill, *Biogas Technology and Principles*, N. Y. Research Press.
7. Arthur Wellinger, Jerry D. Murphy, David Baxter, *The Biogas Handbook: Science, Production and Applications*, Wood Head Publishing.

Course Outcomes

At the end of the course student will be able to

- Get the knowledge of bio-mass resources and bio-energy.
- Analyze practical problems in bio-gas plants.
- Utilize bio-mass resources and bio-energy concepts in design of bio-gas plants.
- Understand bio-mass resource potential and assessment for energy generation.

Course Code	:	SRE 523 T
Course Title	:	Converters For Renewable Energy Systems
Number of Credits		03
Prerequisites (Course Code)	:	Power Electronics course in UG with knowledge on basics of semiconductor switches, basics of converter topology (AC-DC,AC-AC & DC-DC), basic control techniques of Power Electronic equipment
Course Type	:	

Course Learning Objectives

- This give an introduction' to the recent developments of power electronics from components, topology and control techniques.
- This course drives on the application requirements of power electronics.
- This is a higher level of subject that will help to work in demanding areas of power electronics in renewable energy systems

Course Contents

Unit 1

Advanced Converters

Drawbacks of conventional converters & Inverters, Multi-pulse converters & Inverters, Improved power quality ac-dc converters such as single-phase buck, boost, buck-boost ac/dc converters, PWM (Pulse width modulated) based single- phase, three-phase VSC (Voltage source converters), Current Source Inverters.

Unit 2

Multilevel Converters/ Inverters

Advance converter topologies for PEE - Interleaved converters, multilevel converters (Cascaded H-Bridge, Diode clamped, NPC, Flying capacitor) multi pulse PWM current source converters, advanced control schemes, Capacitor unbalance

Unit 3

PWM Schemes

Conventional PWM schemes & their performance, Multilevel PWM Schemes, Hybrid PWM schemes, Power converter topologies for solar and wind– Control of dc-dc converter, inverters and relevant.

Unit 4

Case Studies

Literature- MLI Applications in Drives and power quality, Hybrid converters- Inverters- Closed Loop Renewable Energy conversion systems- PV power conversion using MLIs.

Reference Books

1. N. Mohan, T. M. Undeland and W. P. Robbins, *Power Electronics Converter Application and Design*, ThirdEdition, John Willey & Sons, 2004.
2. M. H. Rashid, *Power Electronics, Circuits, Devices and Applications*, Pearson, 2002, India.
3. K. Billings, *Switch Mode Power Supply Handbook*, McGraw-Hill, 1999, Boston.

4. Bin Wu, *High-Power Converters and AC Drives*, IEEE Press, A John Wiley & Sons, Inc Publication, New York,2006.
5. Relevant literature review for case studies and course applications.

Course Outcomes

At the end of the course student will be able to

- Understand the principles of operation of advanced PWM converters.
- Appraise various advanced converter topologies and the suitable control schemes.
- Recognize recent developments in design aspects of renewablepower conversion systems.

Course Code	:	SRE 524 T
Course Title	:	Sustainable Buildings
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- To be able to understand solar passive building and green building concepts.
- To be able to analyses heat transmission in buildings.
- To be able to estimate the building load.

Course Contents

Unit-I

Introduction

Bio-climatic classification of India, solar passive building and green building concepts, national building code, policies on energy efficient and green buildings.

Thermal Comfort

Criteria and various parameters, psychometric chart, thermal indices. Indoor air quality; requirements in residential, commercial & hospital buildings.

Unit-II

Passive Heating Concepts

Introduction, direct and indirect heat gain, solar green houses, solar wall, solar trumbo wall.

Passive Cooling Concepts

Evaporative cooling, evaporative air and water coolers, radioactive cooling, application of wind, water and earth for cooling, use of shading, paints and cavity walls for cooling.

Unit-III

Design for Human Comfort

Psychometric chart, thermal indices, climate and comfort zones, significance of air temperature, calculation of instantaneous heat gain through building envelope, calculation of solar radiation on buildings, building orientation, introduction to design of shading devices, overhangs, factors that affect energy use in buildings, ventilation and its significance.

Unit-IV

Heat Transmission in Buildings

Surface co-efficient: air cavity, internal and external surfaces, overall thermal transmittance, wall and windows, heat transfer due to ventilation/infiltration, internal heat transfer, solar temperature, decrement factor, phase lag, day lighting.

Estimation of Building Loads

Steady state method, network method, numerical method, passive solar designs of building thumb rules for design of buildings and building codes, typical design of selected buildings in various climatic zones.

Reference Books

1. M. S. Sodha, N. K. Banaal, P. K. Bansal, A. Rumaar and M. A. S. Malik, *Solar Passive: Building Science and Design*, Pergamon Preen (1986).
2. Jamee, L. Threlked, *Thermal Environment Engineering*, Prentice Hall, INC-, Raglevood Cliffs, New Jersey (1970).
3. T. A. Markus and R. N. Morris, *Building, Climate and Energy Spotswood* Ballantype Ltd-, London U.K. (1980).
4. H. P. Garg et.al, *Solar Thermal Energy Storage*, D. Reidel Publishing Company (1985).
5. V. Alexiades & A. D. Solomon, *Mathematical Modelling of Melting and Freezing Process* Hemisphere Publishing Corporation, Washington (1993).

Course Outcomes

At the end of the course student will be able to

- Understand solar passive building and green building concepts.
- Analyses heat transmission in buildings.
- Estimate the building load.

Course Code	:	SRE 525 T
Course Title	:	POWER SYSTEM OPERATION AND CONTROL
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- To have an overview of power system operation and control.
- To model power-frequency dynamics and to design power-frequency controller.
- To model reactive power-voltage interaction and the control actions to be implemented for maintaining the voltage profile against varying system load.

Course Contents

Unit I

Introduction

System Load , variation , load characteristics , load curves and load-duration curve (daily, weekly and annual) - load factor - diversity factor. Importance of load forecasting and simple techniques of forecasting. An overview of power system operation and control.

Unit II

Real Power - Frequency Control

Speed governing mechanism and modelling , speed-load characteristics , load sharing between two synchronous machines in parallel. Control area concept LFC control of a single area. System. Static and dynamic analysis of uncontrolled and controlled cases. Integration of economic dispatch control with LFC. Two-area system , modelling , static analysis of uncontrolled.

Unit III

Reactive Power–Voltage Control

Reactive power control. Excitation systems , modelling. Static and dynamic analysis ,stability compensation , generation and absorption of reactive power. Relation between voltage, power and reactive power at a node - method of voltage control - tap-changing transformer. System level control using generator voltage magnitude setting, tap setting of OLTC transformer and MVAR injection of switched capacitors to maintain acceptable voltage profile and to minimize transmission loss.

Unit-IV

Computer Control of Power Systems

Need of computer control of power systems. Concept of load dispatch centre and the functions , system monitoring - data acquisition and control. System hardware configuration – SCADA

Reference Books

1. J. Allen Wood and F. Wollenberg Bruce, *Power Generation, Operation and Control*, John Wiley Sons, Inc, 2003.
2. Chakrabarti & Halder, *Power System Analysis: Operation and Control*, Prentice Hall of India, 2004 Edition.
3. D. P. Kothari and I. J. Nagrath, *Modern Power System Analysis*, Third Edition, Tata McGraw Hill Publishing Company Limited, New Delhi, 2003. (For Chapters 1, 2 & 3)
4. L. L. Grigsby, *The Electric Power Engineering Hand Book*, CRC Press & IEEE Press, 2001.
5. Hadi Saadat, *Power System Analysis*, (For the chapters 1, 2, 3 and 4)11th Reprint 2007.
6. P. Kundur, *Power System Stability and Control*, MC Craw Hill Publisher, USA, 1994.
7. I. Elgerd Olle, *Electric Energy Systems theory An introduction*, Tata McGraw Hill

Course Outcomes

At the end of the course student will be able to

- To understand the day to day operation of power system and the control actions to be implemented on the system
- To meet the minute-to-minute variation of system load demand.

Course Code	:	SRE 526 T
Course Title	:	Fuel Cell Technologies
Number of Credits	:	03
Prerequisites (Course Code)	:	
Course Type	:	PE

Course Learning Objectives

- To be able to understand fuel cell fundamentals.
- To be able to analyses the performance of fuel cell systems.
- To be able to understand construction and operation of fuel cell stack and fuel cell system.

Course Contents

Unit-I

Overview of Fuel Cells

Fuel cell, brief history, classification, working principle, need of fuel cells, fuel cell basic chemistry and thermodynamics, heat of reaction, theoretical electrical work and potential, theoretical fuel cell efficiency.

Fuels for Fuel Cells

Hydrogen, Hydrocarbon fuels, effect of impurities such as CO, S and others.

Unit-II

Fuel Cell Electrochemistry

Electrode kinetics, Types of voltage losses, polarization curve, fuel cell efficiency, Tafel equation, exchange currents.

Unit-III

Fuel Cell Process Design

Main PEM fuel cell components, materials, properties and processes: membrane, electrode, gas diffusion layer, bi-polar plates, fuel cell operating conditions: pressure, temperature, flow rates, humidity.

Main components of solid-oxide fuel cells, cell stack and designs, electrode polarization, testing of electrodes, cells and short stacks, cell, stack and system modelling.

Unit-IV

Fuel Processing

Direct and in-direct internal reforming, reformation of hydrocarbons by steam, co_2 and partial oxidation, direct electro-catalytic oxidation of hydrocarbons, carbon decomposition, sculpture tolerance and removal, using renewable fuels for SOFCs.

Reference Books

1. Gregor Hoogers, *Fuel Cell Technology Hand Book*, CRC Press, 2003.
2. Karl Kordesch & Gunter Simader, *Fuel Cells and Their Applications*, VCH Publishers, NY, 2001.
3. F. Barbir, *PEM Fuel Cells: Theory and Practice* (2nd Ed.) Elsevier/ Academic Press, 2013.
4. C Subhash, Singal and Kevin Kendall, *High Temperature Fuel Cells: Fundamentals, Design and Applications.*

Course Outcomes

At the end of the course student will be able to

- Understand fuel cell fundamentals.
- Analyse the performance of fuel cell systems.
- Understand construction and operation of fuel cell stack and fuel cell system.
- Apply the modelling techniques for fuel cell systems.

Course Code	:	SRE 527 T
Course Title	:	Energy Storage
Number of Credits	:	03
Prerequisites (Course code)	:	
Course Type	:	PE

Course Learning Objectives

- To provide understanding of fundamental concepts of heat storage materials.
- To provide fundamental knowledge sensible heat storage material and their applications.
- To provide understanding of fundamental concepts the latent heat storage materials.
- To provide fundamental knowledge thermo chemical heat storage material and their applications.

Course Contents

Unit-I

Introduction

Introduction of energy storage technology, requirement for energy storage, Current status, Future prospect of storage, global energy and the required co_2 reduction, maturity of different energy storage systems and cost effects.

Unit-II

Mechanical energy storage systems

Flywheel energy storage (FES), pumped hydropower storage (PHS), and compressed-air energy storage (CAES). comparison and application state-of-arts including principle, function and deployments. technical characteristics in terms of power rating and discharge time, storage duration, energy efficiency, energy density, cycle life and life time, capital cost etc. case study/project based on mechanical energy storage.

Unit-III

Sensible Heat Storage

Properties of solid sensible storage materials, classifications of sensible thermal energy storage systems, short-term (diurnal)/long-term (seasonal) storage, cool/low/medium/high-temperature storage, active and passive storage, working principle, sensible thermal storage technologies storage methods in space-heating system, solar power plant with sensible thermal energy storage, storage for solar-cooling system, thermal performance evaluations.

Latent Heat Storage

Main characteristics, PCMs classifications, moderate or high temperature PCM, specific PCM applications, mechanisms to improve phase change material applications, nanoparticle-encapsulated PCMs, cascades of PCM systems.

Unit-IV

Electrochemical energy storage

Flow battery, battery, fuel cell, and capacitor. comparison and application state-of-arts including principle, function and deployments. technical characteristics of various electrochemical energy storage systems. case study/project

Hydrogen energy

Hydrogen economy, Hydrogen based FCV, hybrid electric vehicle, maintenance of FCV, safety.

Reference Books

8. Ataer, O. Ercan. *Energy Storage Systems-Volume I* (2009): 97, Encyclopedia of Life Support Systems.
9. Kalaiselvam, S., and R. Parameshwaran. *Thermal Energy Storage Technologies for Sustainability: Systems Design, Assessment and Applications*. Elsevier.
10. Fleischer, Amy S. *Thermal Energy Storage Using Phase Change Material*. Springer.
11. Ibrahim D., *Thermal Energy Storage: Systems and Applications*, 2nd Edition, Wiley.

Course Outcomes

At the end of the course student will be able to

- Get the knowledge of different heat storage materials.
- Get the knowledge of sensible heat storage materials.
- Get the knowledge of latent heat storage materials.
- Get the knowledge of thermo-chemical heat storage materials.

Course Code	:	SRE 528 T
Course Title	:	Hybrid Electric Vehicles
Number of Credits	:	03
Prerequisites (Course Code)	:	Power Systems, Power Electronics, Electrical Machines & Signals and Systems.
Course Type	:	PE

Course Learning Objectives

- This course introduces the fundamental concepts, principles, analysis and design of hybrid and electric vehicles.
- This course goes deeper into the various aspects of hybrid and electric drive train such as their configuration, types of electric machines that can be used, energy storage devices, etc.

Course Contents

Unit-I

Introduction

Introduction to hybrid electric vehicles: history of hybrid and electric vehicles, social and environmental importance of hybrid and electric vehicles, impact of modern drive-trains on energy supplies. conventional vehicles: basics of vehicle performance, vehicle power source characterization, transmission characteristics, and mathematical models to describe vehicle performance.

Unit-II

Hybrid Electric Drive

Hybrid electric drive-trains: basic concept of hybrid traction, introduction to various hybrid drive-train topologies, power flow control in hybrid drive-train topologies, fuel efficiency analysis.

Unit-III

Electric Propulsion Unit

Introduction to electric components used in hybrid and electric vehicles, configuration and control of DC motor drives, configuration and control of induction motor drives, configuration and control of permanent magnet motor drives, configuration and control of switch reluctance motor drives, drive system efficiency.