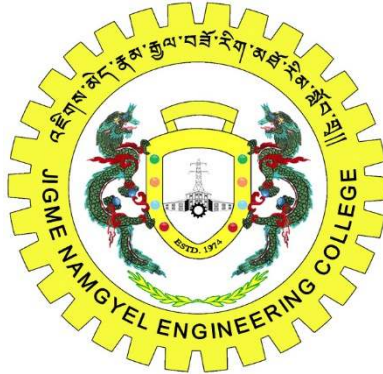


# Academic Rules and Regulations



Jigme Namgyel Engineering College

Royal University of Bhutan

Dewathang : Bhutan

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## Table of Contents

<b>1. Admission Criteria .....</b>	<b>3</b>
<b>2. Assessment Regulations .....</b>	<b>3</b>
<b>2.1. Continuous Assessment (CA).....</b>	<b>3</b>
<b>2.1.1. Distribution of CA marks .....</b>	<b>3</b>
<b>2.1.2. Make-up Test .....</b>	<b>3</b>
<b>2.2. Semester End Examination (SEE).....</b>	<b>4</b>
<b>2.2.1. Eligibility to appear in the SEEs.....</b>	<b>4</b>
<b>2.3.1. CA reassessment.....</b>	<b>5</b>
<b>3. Guidelines for setting Question Papers.....</b>	<b>5</b>
<b>3.1. Phase Tests.....</b>	<b>5</b>
<b>3.2. Semester End Examinations.....</b>	<b>6</b>
<b>4. Evaluation and re-evaluation of answer scripts .....</b>	<b>7</b>
<b>4.1. Phase tests .....</b>	<b>7</b>
<b>4.2. Semester End Examination .....</b>	<b>8</b>
<b>5. Promotion / Progression criteria.....</b>	<b>8</b>
<b>5.1. Assessment of a Module and Progression [WAL D1.6].....</b>	<b>8</b>
<b>5.2. Re-assessment and Repeat of a module [WAL D1.6] .....</b>	<b>9</b>
<b>5.3. Academic Dishonesty [D4, WAL ] .....</b>	<b>11</b>
<b>5.4. Penalties for academic dishonesty .....</b>	<b>12</b>
<b>6. Final results and Awards.....</b>	<b>12</b>
<b>7. Guidelines for the invigilators during the examination duty.....</b>	<b>13</b>

## 1. **Admission Criteria**

Candidates seeking admission for Bachelor of Engineering and Diploma programmes at Jigme Namgyel Engineering College (JNEC), Dewathang must fulfill the admission requirements for the in-country training programmes approved by Royal University of Bhutan (RUB).

## 2. **Assessment Regulations**

The College adopts both Continuous Assessment (CA) and Semester End Examination (SEE) to assess the performance of students.

### 2.1. **Continuous Assessment (CA)**

CA is assessed on the basis of phase test, class tests, quizzes, assignments, case studies, mini projects, as appropriate for the module. The phase test is conducted during the eighth (8<sup>th</sup>) week after the commencement of the semester. Class tests, quizzes, assignments, case studies are distributed evenly throughout the semester and assessed accordingly.

The CA for the students in the Laboratory/Workshop is assessed on the basis of their performance in the laboratory/workshop, written reports submitted against each experiment/laboratory works/job performed and practical tests/viva-voce or both as appropriate.

#### 2.1.1. **Distribution of CA marks**

The distribution of CA marks for different component of assessment is as per the module descriptor.

#### 2.1.2. **Make-up Test**

A Make-up test is a test conducted for those students who are not able to attend the phase test. Students may be allowed to sit for the make-up test under any of the following circumstances:

- 2.1.2.1. If a student is hospitalized and/or advised bed rest by an authorized medical officer, during the time of the test,
- 2.1.2.2. In the event when a student is away from the college during the time of the test to attend the funeral of his/her parents, brother or sister, spouse, children.
- 2.1.2.3. If a student is on official duty during the time of the test and when the absence is inevitable.

However, in all such cases, the concern student has to produce authentic documents to the Dean, Academic Affairs (DAA) through the Head of the

respective department. A student may be allowed to sit for the make-up test subject to approval from the DAA.

Student(s) should have informed the Dean, Student Affairs (DSA) and sought approval for leave prior to leaving the college to attend any out of station works.

Based on the evidence presented by the student, the DAA shall grant permission for the make-up test if the reason of absence is felt genuine. Otherwise that component of the test will be marked 0 (Zero).

Following conditions shall apply for make-up test:

- i. Students appearing for the make-up test on the above ground shall be awarded the actual marks that s/he has secured.
- ii. Syllabus for the make-up test shall be the whole syllabus covered till the date scheduled for the make-up test.
- iii. Respective module tutors, in consultations with the Head of the Department (HoD) and the Assistant Examination and Student Record Officer (AESRO) shall organize and conduct the make-up test and submit the marks to the Examination Center.

**Note:** The CA marks shall be made available to students **seven days** before the scheduled date of the SEE.

## **2.2. Semester End Examination (SEE)**

The SEEs are conducted internally. The respective module tutors are mandated to prepare the SEE question papers which will be moderated by a moderation panel. The HoD shall constitute and appoint the moderation and re-evaluation panel.

### **2.2.1. Eligibility to appear in the SEEs**

To be eligible to sit for the SEEs a student must have:

- 2.2.1.1. A minimum of 90% attendance in each module during the semester.
- 2.2.1.2. A minimum of 80% attendance in each module during the semester for extenuating circumstances as defined in section B10 of the WAL.

If any student's not meeting above mentioned criteria will not be eligible to appear in the SEEs of that module(s). The concerned student will be

treated failed in the module(s) and have to repeat the module(s) as per Re-assessment and Repeat of a module clause of D1 in WAL.

### **2.3. Reassessment**

#### **2.3.1. CA reassessment**

Re-assessment in CA will be conducted at the beginning of every semester for student's not securing 40% marks in CA in two modules or less.

#### **2.3.2. SEE reassessment**

Re-assessment in Semester End Examination will be conducted at the beginning of every semester for students failing two modules or less.

**Note:** Re-assessment should be conducted in line to “Re-assessment and Repeat of a module in D1 of WAL.”

### **2.4. Students status update**

The respective module tutor shall update the students status and submit the names of all those student(s) who are not able to secure 40% marks in CA or do not have minimum class attendance of 90% in any module(s) to the DAA through the respective Head of department 5 (five) days before the scheduled date of the SEEs.

### **3. Guidelines for setting Question Papers.**

All the examinations are conducted internally. The module tutors are entrusted with the responsibility of setting question papers and evaluation of the students' works. The questions should be typed on the standard format developed and issued by Assistant Examination and Student Record Officer (AESRO).

#### **3.1. Phase Tests**

3.1.1. The respective module tutors shall set the question papers and submit a printed and electronic copy of the same to the AESRO within the deadline prescribed by the Examination Center.

3.1.2. The duration of phase test shall be one hour for all theory papers and two hour (if necessary) for design and drawing modules.

3.1.3. Module tutors are also required to prepare the solutions with complete marking schemes for the phase test papers but the same are not required to be submitted to Examination Center. The

solution and marking schemes so prepared will be used to check the completeness of the problems and for evaluation of the students' work.

- 3.1.4. If two or more tutors are involved in teaching a module, they are required to set a common question paper.
- 3.1.5. In case, any faculty has to leave the campus for official tour, training, personal leave or resign from the service, s/he must complete all the works related to exam before availing the relieving order/leave approval so that the students do not suffer.

### **3.2. Semester End Examinations**

- 3.2.1. All module tutors are required to prepare two sets of question papers with complete solution and marking scheme for each module and submit the same to the respective HoD. Both sets of question papers must be of the equal standards.
- 3.2.2. The SEE questions shall be set covering the entire contents included in the module descriptor.
- 3.2.3. The questions for any tests / examinations should be such that the student's understanding of the subject matter can be tested and not memorizing and reproduction. The moderation panel is required to check this aspect during the moderation
- 3.2.4. The duration of SEEs shall be one to three hours for all the theoretical modules and four hours (if necessary) for design and drawing modules.
- 3.2.5. The question papers set by the module tutors shall be moderated by the moderation panel.
- 3.2.6. The HoD shall coordinate for the submission of the final version (moderated and edited) of the question papers in printed and electronic form to the Examination center along with the original question paper (moderated and signed by the moderation panel) and solution sets with marking schemes.
- 3.2.7. The AESRO shall select any, one set of question paper for the SEE. The second set shall be retained for re-assessment, if required,

- 3.2.8. The maximum number of questions for the SEEs in each module shall be limited to 10 (ten). However, each question may have several sub parts.
- 3.2.9. All instructions to be conveyed to the students during the examination on the module must be clearly stated on the cover page of the question papers itself, under general instructions heading.
- 3.2.10. Module tutors are required to remind the Examination center before the exam, if any extra materials such as graph paper, charts are required to be given to the students during examination. Such requirements should also be mentioned in the cover page of the question paper itself.
- 3.2.11. In case of faculty having to leave the campus for official tour, training or resignation, they must complete all their works related to exam before leaving the station.

#### **4. Evaluation and re-evaluation of answer scripts**

##### **4.1. Phase tests**

- 4.1.1. The individual module tutors are entrusted with the responsibility of evaluation of phase test papers.
- 4.1.2. The evaluated papers shall be shown to the students for their verifications. The paper should be collected back and submitted to the Examination Center for record and future reference.
- 4.1.3. The marks obtained in the phase tests shall be entered in the statement of marks entry form maintained in the Examination center within the prescribed time.
- 4.1.4. The marks obtained in the tests and assignments shall be entered in the log book maintained by the module tutors and give a copy of the statement of performance to the respective HoDs. The feedback on the tests and assignments shall be given to the students as early as possible and not later than 15 days after the conduct of the test / assignment.
- 4.1.5. In the event of unavoidable circumstances, HoD shall make arrangements to appoint competent faculty to evaluate the pending papers.

## **4.2. Semester End Examination**

- 4.2.1. The individual module tutors are entrusted with the responsibility of evaluating SEE answer scripts.
- 4.2.2. Only red colored ink pen/ball pen should be used for marking the answer scripts.
- 4.2.3. On completion of evaluation, the answer scripts along with solution and marking scheme shall be returned to the Examination Center.
- 4.2.4. The evaluated papers shall be re-evaluated by a re-evaluation panel. The re-evaluation panel shall review the evaluation done by the individual tutors including the marks awarded and make changes in the entry if any mistakes are observed.
- 4.2.5. The Programme Board of Examiners shall review the results within the department and submit the findings and actions taken / proposed to the College Academic Committee (CAC) for final review. The CAC shall take the final decision before declaring the result.
- 4.2.6. Student(s) wishing to appeal against the decision of the CAC may write to the Secretary, Academic Appeal Committee, RUB, following procedures vide clause D1, section 11 of WAL.

## **5. Promotion / Progression criteria.**

The Programme Board of Examiners of respective department makes decisions on the assessment and promotion of each student and report to the College Academic Committee for final ratification and declaration of the result. A student failing in not more than two (2) modules shall qualify for promotion to next higher semester. However, the student has to repeat the failed module(s) whenever the module(s) are offered at first available instance.

### **5.1. Assessment of a Module and Progression [WAL D1.6]**

- 5.1.1. To pass a module a student must obtain a minimum of 50% overall marks including both the CA and SEEs. However, students must obtain a minimum of 40% marks each in CA and SEEs in each module.



- 5.1.2. A student will be awarded a mark of zero for non-submission of a component of course work.
- 5.1.3. A student who has been absent from the examination or who has performed badly due to illness or other cause acceptable to the Programme Board of Examiners shall be allowed to take the examination and it shall be treated as a first assessment. His examination will be conducted during re-assessment time.

## **5.2. Re-assessment and Repeat of a module [WAL D1.6]**

- 5.2.1. Reassessment is permitted to allow a student to make good an initial failure.
- 5.2.2. A student may be re-assessed in a failed module(s) provided that s/he:
  - 5.2.2.1. Has not failed in more than 30% of the total number of modules prescribed for that semester (rounded off to the nearest whole number).
  - 5.2.2.2. Shall not be re-assessed in a module more than once.
  - 5.2.2.3. Re-assessments should take place before, or at the commencement of the next semester.
  - 5.2.2.4. A student who is re-assessed for a module failure, where there are no clear extenuating circumstances, shall be awarded no more than 50% marks on passing the re-assessment, this being the minimum pass marks.
  - 5.2.2.5. A student shall be eligible to repeat failed module(s) where s/he:
    - 5.2.2.5.1. Has failed in the re-assessment of module(s). In such an event, the student shall meet all assessment requirements of those modules. For students under this category, attendance in lectures is not mandatory.
    - 5.2.2.5.2. Has failed more than 30% of the total number of modules prescribed for that semester (rounded off to the nearest whole number of modules). In such an event the student shall meet all teaching, learning and assessment

requirements of the failed modules. For students under this category, attendance in lectures is mandatory.

- 5.2.3. A student will be given the opportunity to repeat a failed module when it is offered at the first available instance.
- 5.2.4. Where a module is repeated the mark obtained will replace the mark achieved at earlier attempts.
- 5.2.5. A student may repeat a failed module only two times. In the event a student fails a repeated module, he/she will not be eligible for re-assessment.
- 5.2.6. Any student who have to repeat a module(s) have to pay the tuition fees for each module being repeated.
- 5.2.7. The normal / prescribed duration of course for B.E and Diploma programme at JNEC is 4 and 2 years respectively.
- 5.2.8. Any student(s) who fail to complete the course within the normal / prescribed duration have to repeat the course as a self-financed student. Such candidate(s) has to bear the tuition fee and stipend.
- 5.2.9. The maximum permissible duration for the completion of B.E and Diploma programme at JNEC is 6 and 4 years respectively which include an additional grace period of two (2) years.
- 5.2.10. A students under medical case may be considered for one year additional opportunity subject to approval of the medical case.
- 5.2.11. Any student(s) not able to complete the course within the maximum permissible duration has to withdraw from the programme and will not be eligible for the award of diploma.
- 5.2.12. Students who fail in On-the-Job Training or Project Work shall repeat the same at their own expense. They have to make arrangements for accommodation and food
- 5.2.13. Any student failing to register to repeat the failed module will be treated failed in that module and losses one opportunity to repeat the module [13<sup>th</sup> IAC].

### 5.3. Academic Dishonesty [D4, WAL ]

The maintenance of fair and honest conduct is an essential part of any assessment system. The University views any form of academic dishonesty as a serious offence and will deal with it accordingly.

Academic dishonesty may be defined as any attempt by a student to gain an unfair advantage in any assessment. It may be demonstrated by one of the following:

- 5.2.1 Collusion: the representation of a piece of unauthorized group work as the work of a single candidate.
- 5.2.2 Commissioning: submitting an assignment done by another person as the student's own work.
- 5.2.3 Duplication: the inclusion in coursework of material identical or substantially similar to material which has already been submitted for any other assessment within the University.
- 5.2.4 False declaration: making a false declaration in order to receive special consideration by an Examination Board or to obtain extensions to deadlines or exemption from work.
- 5.2.5 Falsification of data: presentation of data in laboratory reports, projects, etc., based on work purported to have been carried out by the student, which have been invented, altered or copied by the student.
- 5.2.6 Plagiarism: the unacknowledged use of another's work as if it were one's own.

Examples are:

- 5.2.6.1 verbatim copying of another's work without acknowledgement
- 5.2.6.2 paraphrasing of another's work by simply changing a few words or altering the order of presentation, without acknowledgement
- 5.2.6.3 ideas or intellectual data in any form presented as one's own without acknowledging the source(s)
- 5.2.6.4 making significant use of unattributed digital images such as graphs, tables, photographs, etc. taken from test

books, articles, films, plays, handouts, internet, or any other source, whether published or unpublished

5.2.6.5 submission of a piece of work which has previously been assessed for a different award or module or at a different institution as if it were new work

5.2.6.6 use of any material without prior permission of copyright from appropriate authority or owner of the materials used.

#### **5.4. Penalties for academic dishonesty**

5.4.1 Any student(s) found using unfair means or in possession of materials that could be used for unfair means in any of the tests (class tests, phase test, assignment) will be marked Zero in that test and shall not be eligible to sit for the makeup test.[15th PBE held on 24th April 2012]

5.4.2 Any student found using unfair means or in possession of materials that could be used for unfair means in any paper during the SEEs will be treated failed in that semester. All the examination of that semester (regular and repeat modules) will be treated null and void. S/he will be eligible to repeat the semester when offered next as a self-financed student, subject to fulfilling the repeat criteria. [Second ACDA, Jan 2015, 12<sup>th</sup> PBE Meeting held on 29th November 2011, Breaches of Examination regulations as reflected in the WAL ].

#### **6. Final results and Awards**

6.1 A student eligible for the award of Diploma or under graduate on successful completion of the prescribed course. S/he must be a registered student of the college.

6.2 The overall mark at the end of each semester is the mark awarded for each module in that semester weighted by the proportional size (or credit value) of that module.

The final mark should be combination of the overall mark of all the years weighted in the following manner:

Duration of Programme (in years)	Weightings (%) taken from every year of the programme			
	I	II	III	IV
1	100			
2	30	70		
3	20	30	50	
4	10	20	30	40

6.3 Judgment of performance will be made in the following scales:

- a) 80% and above - An outstanding performance.
- b) 70 - 79.9% - Very good performance.
- c) 60 - 69.9% - Good performance.
- d) 50 – 59.9% - Satisfactory performance.
- e) 49.9 % and below - Fail

6.4 Eligibility for the award of position.

- a) Only students who have passed all the modules in the first attempt are eligible for first and second position.
- b) Any student who had taken re-assessment or had to repeat module(s) or semester will be eligible to compete from third position onwards.

**7. Guidelines for the invigilators during the examination duty.**

- 7.1. All invigilators shall report to Examination center 30 minutes before the start of any examination and collect attendance registers / files, question papers and other required stationeries.
- 7.2. Invigilators shall reach the examination hall 15 (fifteen) minutes before the scheduled time of start of the examination.
- 7.3. One senior faculty member will be identified as the Chief Invigilator in each examination hall.
- 7.4. The Chief Invigilator shall arrange to open/close the Examination hall at the start / end of the examination and take/hand over the key from/to Examination center.

- 7.5. All Invigilators have the right to check students, for possession of any unauthorized materials, at the time of entering the examination hall, and also during the time of examination.
- 7.6. The Chief Invigilator shall ensure that all the required formalities such as checking of student's identity cum permission cards, marking students attendance, making announcement, if any, and so on are observed strictly.
- 7.7. Invigilators should distribute answer scripts and question papers 10 minutes before the scheduled time for the start of exam. This 10 minutes time is allotted for reading the Questions papers only. During this period no one is allowed to write.
- 7.8. Candidate(s) coming late up to 20 minutes may be allowed to enter the room/hall. If any candidate(s) is late by more than 20 minutes s/he should be directed to produce the written permission from the DAA / President. However, loss of time in the process shall not be entertained.
- 7.9. Invigilators should sign and put date on the main answer script issued to students after verifying the entries made by the students viz, Student No. Class, Module Name, Date of examination.
- 7.10. Invigilators shall check all support material like calculator, log tables, data sheets, instruments box, etc. for possession of any materials which could be used for unfair means during the examination. If any such material is seen, the invigilator shall immediately cease such materials along with the answer book and report to the Examination center through the chief invigilator.
- 7.11. Any student found using any sort of unfair means or found in possession of any materials that could be used as unfair means in the examination, the invigilator shall cease the answer book along with the caught material. The matter should immediately be reported to the Examination center with a written report for final verification and action by the PBE. The candidate may be given a fresh answer sheet to continue writing his / her examination.
- 7.12. The Invigilators should collect the answer books at the finish of the Examination, count to ensure correct number of answer books,

arrange these answer books in discipline/class wise and submit to the Examination center.

- 7.13. The DAA and HoD shall be detailed as the Superintendent of Examination during the test and exams. As superintendent of exams, they will organize routine checks and visits and ensure that the exams are carried out smoothly.
  - 7.14. Any books/reference materials found lying inside the examination halls and in the washroom, areas shall be collected and seized.
  - 7.15. Student(s) will be discouraged to go for needs of any kind during the examination. In case of urgency, students may be allowed to go one at a time. However they may be checked for the possession of any restricted materials any time.
  - 7.16. Students shall be allowed to leave the examination hall only after two thirds of the scheduled time is spent in the examination hall.
  - 7.17. Candidates will not be allowed to borrow any items such as pen, pencil, drawing instruments, calculator, etc during the examination.
  - 7.18. If any invigilator is absent from the examination duty without the knowledge of the Examination center, his/her absence will be considered as EOL.
  - 7.19. Invigilators shall be vigilant during the invigilation duty and refrain from gossiping or leaving the examination hall.
  - 7.20. Availing leave of any kind during the Invigilation duty, after the invigilation roster has been finalized and notified, is restricted except under emergency cases. In the event that the availing of the leave is unavoidable, the individual staff has to find a suitable substitute invigilator. Such internal arrangement has to be notified to the Examination center.
8. Dos and Don'ts during the Examination.
    - 8.1. All Students/Candidates should be present at the vicinity of the examination hall thirty minutes before the scheduled time of the commencement of examination.
    - 8.2. Students/Candidates should enter the examination hall only after the invigilators have entered.

- 8.3. Students/Candidates should occupy their own allocated seats. Any change of the seats without the permission from the Chief Invigilator will result in the expulsion of the candidate from the examination.
- 8.4. Students/Candidates must reach the examination hall in the prescribed time. Anyone coming later than 20 minutes without any valid reasons will not be permitted to appear in the Particular Examination. Should there be any genuine reasons; such students/candidate will require to bring the approval from the DAA / President. However, loss of time in the process of obtaining the written approval will not be entertained.
- 8.5. Students/Candidates are not allowed to take any paper(s) other than their identity cum permission card/college card into the examination hall except in the Open book examination. Students/Candidates found carrying any restricted materials shall be detained for further query.
- 8.6. All students/candidates should ensure that they bring their own pen, pencil, scale, ink, eraser, calculator, instrument box, etc. that would be required for the specific examination. Borrowing of any such materials from their colleagues will not be permitted during the examination time. Any attempt to borrow such materials from the colleagues may result in expulsion of the students/candidates from the examination hall. They will not be allowed to even request the invigilators to borrow such materials from another examinee.
- 8.7. Students/Candidates should ensure that the approved support materials such as calculator, log tables, data sheets, instruments box should be free from any additional information or writings.
- 8.8. Students/Candidates should use only blue / black ink pen/ ball pen for writing answers and filling up the information on the cover page of the answer book. Writing answers by pencil is not permitted in the examination / tests except for drawing figures or graphs. [9<sup>th</sup> IPBE].



- 8.9. Programmable or text storing calculators are not permitted in the examination hall.
- 8.10. Students/Candidates are not permitted to bring mobile phones or any other electronics equipment, other than a standard scientific calculator, into the examination hall. If such restricted items are found by the invigilators during checking, the same will be seized and handed over to the Examination center for further investigation and action.
- 8.11. Students/Candidates should complete the entries of their Examination particulars such as Student (registration) number, discipline of study, module name and date of examination on the cover page of the answer book before they start writing the examination. No one is allowed to write his or her name anywhere on the answer book. Answer books without students/candidates number and invigilators signature will be disqualified and will not be evaluated.
- 8.12. Students/Candidates are required to check their answer books before they start writing on it. If any page or pages are found to be torn or not in writing condition, the matter must be reported to the invigilators for replacement
- 8.13. Every student/candidate is required to write his / her student number (registration number) on their question papers also.
- 8.14. All Supplementary answer sheets, if any used, must contain the individual's student number/Registration number, Dated signature of the invigilators and must be serially arranged and tied or stapled.
- 8.15. Students/Candidates will be discouraged to go for needs of any kind during the examination. In case of urgency, they may be allowed to go one at a time. However they may be checked for the possession of any restricted materials any time.
- 8.16. Students/Candidates should be allowed to leave the examination hall only after two third of the examination time has been completed. They are required to submit their answer script to any of the invigilators before leaving the examination hall. If any student(s)/candidate(s) leaves the examination hall without

submitting the answer scripts, s/he will be awarded ZERO marks and declared failed in that module.

- 8.17. Students/Candidates are advised not to adopt any unfair means during examination. If any candidate is found using any sort of unfair means or found in possession of any materials that could be used as unfair means in the examination, the invigilator shall cease the answer book along with the materials used for unfair means and report the case immediately to Examination center with a written report for final verification by the Authority and action by the PBE. The students/candidate may be given a fresh answer sheet to continue writing his / her examination.
- 8.18. Any students/candidates failing to report to the examination without prior information and approval will be awarded ZERO marks and the candidate will be treated failed in that module. However, s/he will be eligible to appear in the re-assessment (supplementary examination). Only the minimum marks required to pass the module will be considered and not the actual marks obtained in the re-assessment.
- 8.19. Similarly, if any student/candidate fails to report for the re-assessment, such students/candidates will be declared failed in that module. Such students(s)/candidate(s) may be permitted to repeat the module provided the maximum permissible duration of the course is not exhausted.

## Tabulation of Module Matrix and Electives

### 1. B.E in Power Engineering

#### Year I Semester I

Module Code	Name of Module	Credit Points	Time Allocation			Assessment			
			L	T	P	CA (Th.)	CA (P)	Sem. Exam	Total Marks
ADE101	Analog and Digital Electronics	12	3	1	2	25	25	50	100
AMA102	Applied Mathematics I	12	3	1	0	25	0	75	100
EGP101	Engineering Graphics *	12	1	0	5	50	0	50	100
BEE103	Circuit Theory and Networks	12	3	1	2	25	25	50	100
EDW101	Electrical Drawing and workshop Practice	12	1	2	2	50	50	0	100
Total		60	11	5	11	175	100	225	500

#### Year I Semester II

Module Code	Name of Module	Credit Points	Time Allocation			Assessment			
			L	T	P	CA (Th.)	CA (P)	Sem. Exam	Total Marks
ACS101	Academic Skills*	12	2	0	2	100	0	0	100
AMA103	Applied Mathematics II	12	3	1	0	25	0	75	100
FLM102	Fluid Mechanics	12	3	1	2	25	25	50	100
DZG101	Dzongkha for Communication*	12	2	0	2	25	25	50	100
EMI102	Measurements and Instrumentation	12	3	1	2	25	25	50	100
Total		60	13	3	8	200	75	225	500

**Year II Semester I**

Module Code	Name of Module	Credit Points	Time Allocation			Assessment			
			L	T	P	CA (Th.)	CA (P)	Sem. Exam	Total Marks
EMC203	DC Machines and Transformers	12	3	1	2	25	25	50	100
AMA204	Applied Mathematics III	12	3	1	0	25	0	75	100
PEG201	Electrical Power Generation	12	3	1	0	25	0	75	100
PEG202	Hydro Power Engineering	12	3	1	2	25	25	50	100
EMT201	Electro Magnetic Field Theory	12	3	1	0	25	0	75	100
Total		60	15	5	4	125	50	325	500

**Year II Semester II**

Module Code	Name of Module	Credit Points	Time Allocation			Assessment			
			L	T	P	CA (Th.)	CA (P)	Sem. Exam	Total Marks
EMC204	AC Machines	12	3	1	2	25	25	50	100
PEG203	Electrical Power Transmission and Distribution	12	3	1	0	25	0	75	100
PEL202	Power Electronics	12	3	1	2	25	25	50	100
EMA202	Energy Management and Auditing	12	3	1	0	25	0	75	100
COP204	Data Structure and Object-Oriented Programming in C++	12	1	0	3	25	25	50	100
Total		60	13	4	7	125	75	300	500

**Year III Semester I**

Module Code	Name of Module	Credit Points	Time Allocation			Assessment			
			L	T	P	CA (Th.)	CA (P)	Sem. Exam	Total Marks
PEG304	Utilization of Electrical Energy	12	3	1	0	25	0	75	100
CSY303	Automatic Control System	12	3	1	2	25	25	50	100
PEG305	Power System protection and Switchgear	12	3	1	2	25	25	50	100
PEG306	Power System Analysis and Stability	12	3	1	2	25	25	50	100
PRW302	Basic Research Methods and Seminar	12	1	2	0	100	0	0	100
<b>Total</b>		<b>60</b>	<b>13</b>	<b>6</b>	<b>6</b>	<b>200</b>	<b>75</b>	<b>225</b>	<b>500</b>

**Year III Semester II**

Module Code	Name of Module	Credit Points	Time Allocation			Assessment			
			L	T	P	CA (Th.)	CA (P)	Sem. Exam	Total Marks
PEG307	Power System Operation and Control	12	3	1	2	25	25	50	100
RER301	Renewable Energy Resources	12	3	1	0	25	0	75	100
PEL303	Power Electronics Application	12	3	1	2	25	25	50	100
COP305	Microcontroller and Embedded System	12	3	1	2	25	25	50	100
MGT302	Engineering Economics and Management	12	3	0	0	25	0	75	100
<b>Total</b>		<b>60</b>	<b>15</b>	<b>4</b>	<b>6</b>	<b>125</b>	<b>75</b>	<b>300</b>	<b>500</b>

### Year IV Semester I

Module Code	Name of Module	Credit Points	Time Allocation			Assessment			
			L	T	P	CA (Th.)	CA (P)	Sem. Exam	Total Marks
PEG408	Power System Optimization	12	3	1	2	25	25	50	100
PEM401	Power System Economics and Hazard Management	12	3	1	0	25	0	75	100
PEG409	High Voltage Engineering and Insulation Coordination	12	3	1	2	25	25	50	100
	Elective 1	12	3	1	0	25	0	75	100
PRW404	Project Work	VII & VIII Sem.			4	25 Marks for ongoing review			
Total		48	12	4	8	125	50	250	425

### Year IV Semester II

Module Code	Name of Module	Credit Points	Time Allocation			Assessment			
			L	T	P	CA (Th.)	CA (P)	Sem. Exam	Total Marks
SEN401	Sustainable Engineering	12	3	1	0	25	0	75	100
	Elective 2	12	3	1	0	25	0	75	100
OJT402	Internship and Seminar	12	Min. 45 days (internal 60 and external examiner 40 marks respectively)						100
PRW404	Project Work	36	0	0	6	Ongoing, review, reports and presentation			75
Total		72	6	2	6	150	75	150	375

**Note:** L: Lecture T: Tutorial P: Practical CA: Continuous Assessment

#### List of Electives:

##### Elective 1

- i. AKS101 Analytical Skills\*
- ii. UHV101 Universal Human Values and Professional Ethics
- iii. EDP201 Entrepreneurship Development\*
- iv. SUR202 Principles of Surveying\*

##### Elective 2

- i. EMC405 Electrical Machine Design

- ii. SGT401 Smart Grid Technologies
- iii. PEG410 Power Qualities and Harmonics
- iv. SYS401 Digital Signal Processing and its Applications
- v. PEG411 Advance Power System Protection and Switchgear

\* Denotes a pre-existing module in another department (Civil, Mechanical, Electrical and IT) at JNP which will be adopted for the B.E. in Power Engineering.

## 2. B.E in Mechanical Engineering

### Year I Semester I

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			Total
			L	T	P		Theory		P	
							CA	EX	CA	
1	EGP10 1	Engineering Graphics	1	0	5	12	50	50	0	100
2	DZG10 1	Dzongkha Communication	2	0	2	12	50	50	0	100
3	ACS10 1	Academic Skills	2	0	2	12	100	0	0	100
4	FME10 4	Material science	3	0	2	12	25	50	25	100
5	FEE102	Fundamentals of Electrical Engineering	3	1	2	12	25	50	25	100
Total			11	1	13	60	250	200	50	500

### Year I Semester II

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			Total
			L	T	P		Theory		P	
							CA	EX	CA	
1	FME105	Mechanics of Materials-I	3	1	2	12	25	50	25	100
2	AMA102	Applied Mathematics-I	3	1	0	12	25	75	0	100
3	MDD103	Mechanical Drawing	1	0	4	12	50	50	0	100
4	ADE101	Analog and Digital Electronics	3	1	2	12	25	50	25	100
5	COP204	Data structure & Object Oriented Programming in C++	1	1	3	12	25	50	25	100
Total			11	4	11	60	150	275	75	500

### Year II Semester I

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			
			L	T	P		Theory		P	Total
							CA	EX	CA	
1	FME206	Mechanics of Materials-II	3	1	2	12	25	50	25	100
2	AMA103	Applied Mathematics-II	3	1	0	12	25	75	0	100
3	FEE203	Fundamentals of Electrical Machines	3	1	2	12	25	50	25	100
4	FME207	Metrology	3	0	2	12	25	50	25	100
5	PAE206	Engineering Thermodynamics	3	1	0	12	25	75	0	100
Total			15	4	6	60	125	300	75	500

### Year II Semester II

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			
			L	T	P		Theory		P	Total
							CA	EX	CA	
1	FME208	Fluid Mechanics	3	1	2	12	25	50	25	100
2	AMA205	Applied Mathematics-IV	3	1	0	12	25	75	0	100
3	MPT205	Manufacturing Processes – I	3	0	2	12	25	50	25	100
4	FME209	Kinematics & Dynamics of Machines	4	1	2	12	25	50	25	100
5	MDD204	Computer Aided Design/ Computer Aided Manufacturing	3	0	2	12	25	50	25	100
Total			16	3	8	60	125	275	100	500



### Year III Semester I

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			
			L	T	P		Theory		P	Total
							CA	EX	CA	
1	PAE307	Hydraulic Machines	3	1	2	12	25	50	25	100
2	AMA306	Numerical Methods and Optimization	3	1	2	12	25	50	25	100
3	MPT306	Manufacturing Processes – II	3	0	2	12	25	50	25	100
4	MDD305	Design of Machine Elements	3	1	0	12	25	75	0	100
5	PAE308	Heat & Mass Transfer	3	1	2	12	25	50	25	100
Total			15	4	8	60	125	275	100	500

### Year III Semester II

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			
			L	T	P		Theory		P	Total
							CA	EX	CA	
1	CSY303	Automatic Control System	3	1	2	12	25	50	25	100
2	PAE309	Heating, Ventilation & Air Conditioning	3	1	0	12	25	75	0	100
3	MPT307	Advanced Manufacturing Technology	3	0	2	12	25	50	25	100
4	MDD306	Mechanical Vibrations	3	1	2	12	25	50	25	100
5	PRW303	Research Methodology	3	0	2	12	30	0	70	100
Total			15	3	8	60	140	225	135	500

### Year IV Semester I

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			
			L	T	P		Theory		P	Total
							CA	EX	CA	
1	IAM405	Mechatronics	3	0	2	12	25	50	25	100
2	IAM406	Fluid Power and Automation	3	0	2	12	25	50	25	100
3	PAE410	Automotive Engineering	3	0	2	12	25	50	25	100
4	ECM403	Engineering Economy	3	0	2	12	25	50	25	100
5	PRW405	Project	7 <sup>th</sup> & 8 <sup>th</sup> sem.		1	-	Proposal presentation & 1 <sup>st</sup> review		20	20
Total			12	0	9	48	100	200	120	420

## Year IV Semester II

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			
			L	T	P		Theory		P	Total
							CA	EX	CA	
1	IAM407	Industrial Engineering	3	0	0	12	25	75	0	100
2	MPT408	Maintenance Engineering	3	1	0	12	50	50	0	100
3		Electives*	-	-	-	12	-	-	-	-
4	OJT402	Internship & Seminar	0	0	1	12	0	60	40	100
5	PRW405	Project	7 <sup>th</sup> & 8 <sup>th</sup> sem.		1	24	Ongoing Review, Report, & Guide assessment		80	80
Total			6	1	1	72	50	210	120	380

Note: L = Lecture

T = Tutorial

P = Practical

CA = Continuous

Assessment

EX = Examination

### List of Elective Modules

The following modules are identified to be offered as electives in the Year IV semester II. The modality of offering elective module will be based on the economic size of 10 students enrolling for a particular elective and the availability of faculty to teach.

Sl. No.	Code	Name of Module	Contact Hours			Credit	Marks			
			L	T	P		Theory		P	Total
							CA	EX	CA	
1	MDD407	Product Design & Development	3	1	0	12	25	75	0	100
2	MDD408	Tribology	3	1	0	12	50	50	0	100
9	EDP101	Entrepreneurship	2	0	2	12	80	20	0	100

### 3. B.E in Surveying and Geoinformatics

#### Year I Semester I

Sl. No.	Module Code	Module Name	Credit	Time Allocation			Assessment			Total Marks
				L	T	P	CA	EX	Pract.	
1	BSR104	Introduction to Surveying and Computation	12	3	0	3	25	50	25	100
2	RST101	Basic Remote Sensing	12	3	1	0	30	70	0	100
3	GIS101	Geographic Information System	12	3	0	3	25	50	25	100
4	SRY101	Computer Applications in Surveying*	12	1	0	3	50	50	0	100
5	ACS101	Academic Skills*	12	2	0	2	100	0	0	100
Total			60	12	1	11	230	220	50	500

#### Year I Semester II

Sl. No.	Module Code	Module Name	Credit	Time Allocation			Assessment			Total Marks
				L	T	P	CA	EX	Pract.	
1	GNS101	Introduction to GNSS	12	3	0	3	25	50	25	100
2	RST102	Basic Photogrammetry	12	3	0	2	25	50	25	100
3	GDS101	Geodesy-I	12	3	1	2	35	50	15	100
4	AMA102	Applied Mathematics I*	12	3	1	0	25	75	0	100
5	DZG101	Dzongkha Communication*	12	2	2	0	50	50	0	100
Total			60	14	4	7	160	275	65	500

**Year II Semester I**

Sl. No.	Module Code	Module Name	Credit	Time Allocation			Assessment			Total Marks
				L	T	P	CA	EX	Pract.	
1	CAS206	Total Station Surveying	12	3	0	3	25	50	25	100
2	RST204	Digital Photogrammetry	12	3	1	2	25	50	25	100
3	GDS203	Geodesy – II	12	3	0	0	25	75	0	100
4	AMA103	Applied Mathematics II*	12	3	1	0	25	75	0	100
5	SYS210	Python Programming	12	3	1	2	20	40	40	100
Total			60	15	3	7	120	290	90	500

**Year II Semester II**

Sl. No.	Module Code	Module Name	Credit	Time Allocation			Assessment			Total Marks
				L	T	P	CA	EX	Pract.	
1	CAS208	Construction Surveying	12	3	0	3	25	50	25	100
2	RST205	Digital Image Processing	12	3	0	3	25	50	25	100
3	GDS204	Map Projection	12	3	1	0	25	75	0	100
4	AMA204	Applied Mathematics III*	12	3	1	0	25	75	0	100
5	SYS211	Database Management System	12	3	1	2	20	40	40	100
Total			60	15	3	8	120	290	90	500

**Year III Semester I**

Sl. No.	Module Code	Module Name	Credit	Time Allocation			Assessment			Total Marks
				L	T	P	CA	EX	Pract.	
1	CTR101	Cartography*	12	3	1	0	25	75	0	100
2	RST306	Advanced Remote Sensing- I	12	3	1	0	30	70	0	100
3	GNS303	GNSS and its Application	12	3	0	3	25	50	25	100
4	AMA307	Fundamentals of Geo-statistics	12	3	1	0	30	70	0	100
5	GIS304	GIS Data Analysis and Modelling	12	2	0	3	30	45	25	100
Total			60	14	3	6	140	310	50	500

### Year III Semester II

Sl. No.	Module Code	Module Name	Credit	Time Allocation			Assessment			Total Marks
				L	T	P	CA	EX	Pract.	
1	SAA301	RS and GIS for Agriculture and Forestry	12	3	0	0	50	50	0	100
2	RST307	Advanced Remote Sensing – II	12	3	0	2	25	50	25	100
3	SAA302	Geological Remote Sensing and Techniques	12	3	0	0	50	50	0	100
4	SAA303	RS and GIS for Disaster Management	12	3	0	0	50	50	0	100
5	PRW302	Basic Research Methods and Seminar*	12	1	2	0	100	0	0	100
Total			60	13	2	2	275	200	25	500

### Year IV Semester I

Sl. No.	Module Code	Module Name	Credit	Time Allocation			Assessment			Total Marks
				L	T	P	CA	EX	Pract.	
1	LPS201	Legal Principles of Surveying*	12	3	1	0	25	75	0	100
2	SAA404	RS and GIS for Environmental Engineering	12	3	0	0	50	50	0	100
3	SAA405	RS and GIS for Urban and Regional Planning	12	3	0	0	50	50	0	100
4	EDP101	Entrepreneurship*	12	2	2	0	80	20	0	100
5	PRW405	Project Work*	VII and VIII Sem.			1	Proposed presentation and 1 <sup>st</sup> review		20	20
Total			48	11	3	1	205	195	20	420

### Year IV Semester II

Sl. No.	Module Code	Module Name	Credit	Time Allocation			Assessment			Total Marks
				L	T	P	CA	EX	Pract.	
1	EEA401	Engineering Economy*	12	3	0	2	40	50	10	100
2	GIS405	Web GIS	12	3	0	0	50	50	0	100
3	OJT402	Internship and Seminar*	12	Min. 45 days (internal 60 and external examiner 40 marks respectively)						100
4	RST408	Unmanned Aerial System (UAS)	12	2	0	2	25	50	25	100
5	PRW405	Project Work*	24	0	0	1	Ongoing review, report & guide assessment		80	80
Total			72	8	0	5	115	150	115	480

**Note:** L = Lecture, T = Tutorial, P = Practical, CA = Continuous Assessment, EX = Examination, Pract=Practical Examination Mark

## 4. Diploma in Civil Engineering

### Year I Semester I

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			Total
			L	T	P		Theory		Pract.	
							CA	EX		
1	MAT101	Engineering Mathematics	3	1	0	12	25	75	0	100
2	CWP101	Civil Engg. Workshop Practice	0	0	6	12	0	0	100	100
3	EGP101	Engineering Graphics	1	0	5	12	50	50	0	100
4	TOS101	Engineering Mechanics	2	1	2	12	25	50	25	100
5	BMC101	Building Materials & Construction	2	1	2	12	25	50	25	100
6	ACS101	Academic Skills	2	2	0	12	100	0	0	100
Total			10	5	15	72	225	225	150	600

**Year I Semester II**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	TOS102	Strength of Materials	3	1	0	12	25	75	0	100
2	BPD101	Civil Engineering Drawing	1	0	4	12	50	50	0	100
3	SRY102	Surveying	2	1	3	12	25	50	25	100
4	DZG101	Dzongkha Communication	2	2	0	12	50	50	0	100
5	FOE101	Soil Mechanics and Foundation Engineering	3	1	2	12	25	50	25	100
Total			11	5	9	60	175	275	50	500

**Year II Semester I**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	TOS203	Structural Mechanics	3	1	0	12	25	75	0	100
2	BPD202	Estimating and Costing	3	2	0	12	50	50	0	100
3	BPD203	Structural Detailing and Drawing	1	0	4	12	50	50	0	100
4	FLM201	Fluid Mechanics	3	1	2	12	25	50	25	100
5	HWE201	Highway Engineering	3	1	2	12	25	50	25	100
Total			13	5	8	60	175	275	50	500

**Year II Semester II**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	MNG201	Principle of Management	3	1	0	12	25	75	0	100
2	EVE201	Environmental Engineering	3	1	2	12	25	50	25	100
3	TOS204	Structural Engineering	3	1	0	12	25	75	0	100
4	EVE202	Irrigation Engineering	3	1	0	12	25	75	0	100
5	PRW201	Project Work	0	0	3	12	75	25	0	100
Total			12	4	6	72	225	350	25	600

**Note:**

L= Lecture T= Tutorial P= Practical

CA= Continuous Assessment

EX= Exam

## 5. Diploma in Electrical Engineering

### Year I Semester I

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	EGP101	Engineering Graphics	1	0	5	12	50	50	0	100
2	DZG101	Dzongkha Communication*	2	2	0	12	50	50	0	100
3	EEC101	Basic Electronics	3	1	2	12	25	50	25	100
4	BEE101	Basic Electrical Engineering	3	1	2	12	25	50	25	100
5	EWP101	Electrical Workshop Practice -I	0	0	4	12	0	0	100	100
<b>TOTAL</b>			<b>9</b>	<b>4</b>	<b>13</b>	<b>60</b>	<b>150</b>	<b>200</b>	<b>150</b>	<b>500</b>

### Year I Semester II

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	MAT101	Engineering Mathematics	3	1	0	12	25	75	0	100
2	ACS101	Academic Skills*	2	2	0	12	100	0	0	100
3	EDE101	Electrical Design Drawing and Estimation - I	1	0	3	12	50	50	0	100
4	EMI101	Electrical Measurements and Instrumentation	3	1	2	12	25	50	25	100
5	EMC101	Electrical Machines - I	3	1	2	12	25	50	25	100
6	EWP102	Electrical Workshop Practice – II	0	0	4	12	0	0	100	100
<b>TOTAL</b>			<b>12</b>	<b>5</b>	<b>11</b>	<b>72</b>	<b>225</b>	<b>225</b>	<b>150</b>	<b>600</b>



**Year II Semester I**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	MNG201	Principles of Management	3	1	0	12	25	75	0	100
2	PSY201	Power System-I	3	1	0	12	25	75	00	100
3	EMC202	Electrical Machines - II	3	1	2	12	25	50	25	100
4	PEL201	Power Electronics	3	1	2	12	25	50	25	100
5	EDE202	Electrical Design Drawing and Estimation- II	1	0	3	12	50	50	0	100
TOTAL			13	4	7	60	150	300	50	500

**Year II Semester II**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	CSY201	Control System	3	1	2	12	25	50	25	100
2	PSY202	Power System - II	3	1	0	12	25	75	0	100
3	PSY203	Switchgear and Protection	3	1	2	12	25	50	25	100
4		Elective	3	1	0	12	25	75	0	100
5	PRW201	Project	0	0	2	12	0	0	100	100
6	OJT201	On the Job Training and Seminar	0	0	1	12	0	0	100	100
TOTAL			12	4	7	72	100	250	250	600

**Note:**

**L= Lecture      T= Tutorial      P= Practical      CA= Continuous Assessment**  
**EX= Exam**

**Elective**

A maximum of three modules may be offered as elective depending upon the availability and specialization of faculty in the department. The invitation for the elective will be open to students in the third semester. Each elective module should have a minimum of 10 students.

1. EDP201 Entrepreneurship Development\*
2. AKS101 Analytical Skills\*
3. PSY205 Utilization and Traction
4. EMA202 Energy Management and Auditing\*\*
5. CEG204 Communication Engineering
6. EVS201 Environmental Science
7. PSY204 Hydro Power Engineering

8. RER201 Renewable Energy Resources Development Technology

\*University wide module

\*\* Denotes pre-existing modules in BE Power Engineering.

Note: Module MGT101 IT Fundamental and Office Productivity Tool: Students must register for MGT101 module if he/she has not studied the same in the high school. A nominal fee will be charged for offering this module.

## 6. Diploma in Mechanical Engineering

### Year I Semester I

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	EGP101	Engineering Graphics	1	0	5	12	50	50	0	100
2	TOS101	Engineering Mechanics	2	1	2	12	25	50	25	100
3	WTG101	Workshop Technology	3	0	2	12	25	50	25	100
4	WEL101	Welding Technology	3	0	4	12	25	50	25	100
5	DZG101	Dzongkha for communication	2	2	0	12	50	50	0	100
Total			11	3	13	60	175	250	75	500

### Year I Semester II

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	ACS101	Academic Skill	2	2	0	12	100	0	0	100
2	MAT101	Engineering Mathematics	4	0	0	12	25	75	0	100
3	TDS101	Thermodynamics	3	1	0	12	25	75	0	100
4	MED101	Mechanical Engineering Drawing	1	0	5	12	0	50	50	100
5	EGM101	Engineering Materials	3	0	2	12	25	50	25	100
6	WTG102	Workshop Theory & Practice – I	3	0	4	12	25	50	25	100
Total			16	3	11	72	200	300	100	600

### Year II Semester I

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	MNG201	Principle of Management	3	1	0	12	25	75	0	100
2	ENC201	Mechanical Estimating & Costing	3	1	0	12	25	75	0	100
3	HPM201	Fluid Power	3	0	3	12	25	50	25	100
4	HPM202	Hydraulic & Hydraulic Machines	3	1	2	12	25	50	25	100
5	WTG203	Workshop Theory & Practice – II	1	0	5	12	25	0	75	100
Total			13	3	10	60	125	250	125	500

### Year II Semester II

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	CSY202	Industrial Drives & Control	3	1	2	12	25	50	25	100
2	AME201	Automobile Engineering	3	0	3	12	25	50	25	100
3	TOM201	Theory of Machines	3	1	0	12	25	75	0	100
4	Elective		3	1	*1	12	25	75	0	100
5	OJT201	On the Job Training and Seminar	0	0	1	12	0	0	100	100
6	PRW201	Project work	0	0	2	12	0	0	100	100
Total			12	3	9	72	100	250	250	600

Note: L = Lecture      T = Tutorial      P = Practical      CA = Continuous Assessment

EX = Examination      \*1 = hour for module with practical component

The following elective modules are identified to be offered in the fourth semester. The choice of elective module will depend on the availability of faculty to teach and the students' interest. The minimum number of students required in a class to offer any elective module is ten.

- Refrigeration & Air Conditioning (ACR201)
- Construction Equipment (CTE201)
- Renewable Energy System (RES201)

- Farm Power and Machinery (FPM101)
- Industrial Engineering & Management (IEM201)
- Entrepreneurship Development (EDP201)
- Environmental Science (EVS201)

Note: Module MGT101 IT Fundamentals and Office Productivity Tools: Students must register for MGT101 module if he/she has not studied the same in the high school. A nominal fee will be charged for offering this module.

## 7. Diploma in Computer System and Network

### Year I Semester I

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	MGT101	IT Fundamentals and Office Productivity Tools	2	0	2	12	50	0	50	100
2	SYS101	Fundamentals of Programming with C	3	1	2	12	30	40	30	100
3	SYS102	Introduction to Database	4	1	2	12	30	40	30	100
4	MAT101	Engineering Mathematics	4	0	0	12	25	75	0	100
5	ACS101	Academic Skills	2	2	0	12	100	0	0	100
Total			15	4	6	60	235	155	110	500

### Year I Semester II

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	HDW101	Computer Hardware Troubleshooting and Maintenance	3	0	3	12	30	20	50	100
2	SYS103	Fundamentals of Server Technology	3	1	2	12	30	30	40	100
3	NET101	Physical Networking	2	1	4	12	30	20	50	100
4	NET102	Internetworking Protocols and Standards	5	1	1	12	30	60	10	100
5	DZG101	Dzongkha Communication	2	2	0	12	50	50	0	100
Total			15	6	9	60	170	180	150	500

**Year II Semester I**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	NET203	Routing and Switching	2	1	3	12	30	20	50	100
2	SYS204	Linux System Administration	3	1	3	12	30	30	40	100
3	SYS205	Windows Server Administration	3	1	2	12	30	30	40	100
4	SYS206	System Analysis and Design	4	3	0	12	30	60	10	100
5	SYS207	Web Technology and Design	3	1	3	12	30	30	40	100
Total			15	7	11	60	150	170	180	500

**Year II Semester II**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	MGT202	Information Security Management	3	1	3	12	30	30	40	100
2	SYS208	Linux Network Services Administration	3	1	3	12	30	30	40	100
3	SYS209	Windows Active Directory	3	1	3	12	30	20	50	100
4	NET204	Network Design and Management	3	1	3	12	30	30	40	100
5	PRW201	Project	0	0	3	12	0	0	100	100
Total			12	4	15	60	120	110	270	500

## 8. Diploma in Electronics and Communication Engineering

### Year I Semester I

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX	CA	
1	DZG101	Dzongkha Communication	2	2	0	12	50	50	0	100
2	OSH101	Occupational Health and Safety	2	1	2	12	60	0	40	100
3	EEE101	Electrical Technology	3	0	2	12	30	40	30	100
4	CNE101	Computer Fundamentals and Programming in C	3	0	3	12	40	30	30	100
5	EEE102	Electronic Devices and Circuits	3	0	2	12	30	40	30	100
<b>Total</b>			<b>13</b>	<b>3</b>	<b>9</b>	<b>60</b>	<b>210</b>	<b>160</b>	<b>130</b>	<b>500</b>

### Year I Semester II

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX	CA	
1	AMA101	Applied Mathematics	3	1	0	12	25	75	0	100
2	TCE101	Analog and Digital Communication	3	0	2	12	30	40	30	100
3	ICE101	Instrumentation and Process Control	2	1	2	12	30	40	30	100
4	CNE102	Data Communication and Networking	2	1	3	12	30	40	30	100
5	EEE103	Digital Electronics and Logic Circuits	3	0	2	12	30	40	30	100
6	ACS101	Academic Skills	2	0	2	12	100	0	0	100
<b>Total</b>			<b>15</b>	<b>3</b>	<b>11</b>	<b>72</b>	<b>245</b>	<b>235</b>	<b>120</b>	<b>600</b>

### Year II Semester I

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	ICE202	Microprocessors and Microcontroller	3	0	3	12	30	40	30	100
2	TCE202	Antenna and Microwave Engineering	2	1	2	12	30	40	30	100
3	MNG201	Principle of Management*	3	1	0	12	25	75	0	100
4	TCE203	Telecommunication Systems	3	1	0	12	30	70	0	100
5	EEE204	Power Electronics	2	1	2	12	30	40	30	100
Total			13	4	7	60	145	265	90	500

### Year II Semester II

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	TCE204	Wireless and Mobile Communication	2	1	2	12	30	40	30	100
2	ICE203	Industrial Automation	3	0	3	12	30	40	30	100
3	CNE204	Optical Fibre Communication	3	1	0	12	30	70	0	100
4		Elective	3	0	0	12	30	70	0	100
5	PRW201	Project*	0	0	3	12	100	0	0	100
6	OJT201	OJT*	0	0	1	12	100	0	0	100
Total			11	2	9	72	320	220	60	600

Note: L = Lecture      T = Tutorial      P = Practical      CA = Continuous Assessment

EX = Examination

#### Electives Modules:

1. EDP101 Entrepreneurship Development\*
2. TCE205 Satellite Communication and Radar Engineering
3. NET203 Switching and Routing\*
4. ICE204 Biomedical Instrumentation

The modules that are marked with an asterisk are University-wide modules, and modules borrowed from the validated Diploma in Civil, Electrical, Mechanical and Computer Systems and Network programmes of the College

## 9. Diploma in Surveying

### Year I Semester I

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	MAT101	Engineering Mathematics *	3	1	0	12	25	75	0	100
2	SRY101	Fundamentals of Surveying	2	1	3	12	25	50	25	100
3	SRY102	Computations and Field Surveying –I	2	1	3	12	25	50	25	100
4	ACS101	Academic Skills *	2	0	2	12	100	0	0	100
5	SRY103	Computer Applications in Surveying	1	0	3	12	50	50	0	100
6	MGT101	IT Fundamentals and Office Productivity Tools *	2	1	4	12	30	30	40	100
Total			12	4	15	72	255	255	90	600

### Year I Semester II

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	SRY104	Computation and Field Surveying –II	2	1	3	12	25	50	25	100
2	SRY105	Engineering Survey	2	1	3	12	25	50	25	100
3	DZO101	Dzongkha*	2	0	1	12	50	50	0	100
4	CTR101	Cartography	3	1	0	12	25	75	0	100
5	LDD101	Land Development and Site Design	3	1	0	12	25	75	0	100
Total			12	4	7	60	150	300	50	500



**Year II Semester I**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	GEO201	Principles and Application of GIS	2	0	3	12	25	50	25	100
2	SRY206	Computation and Field Surveying-III	2	1	3	12	25	50	25	100
3	GEO202	Geodesy	3	1	0	12	25	75	0	100
4	GEO203	Principles and Application of GNSS	2	1	2	12	25	50	25	100
5	GEO204	Photogrammetry and Remote sensing	3	0	2	12	25	50	25	100
Total			12	3	10	60	125	275	100	500

**Year II Semester II**

Sl No.	Code	Name of the Module	Contact hours			Credit	Marks			
			L	T	P		Theory		Pract.	Total
							CA	EX		
1	POM101	Principles of Management*	3	1	0	12	25	75	0	100
2	SRY207	Surveying Analysis and Adjustment	3	1	0	12	25	75	0	100
3	LPS201	Legal Principles of Surveying	3	1	0	12	25	75	0	100
4	SRY208	Survey Camp	0	0	1	12	50	50	0	100
5	PRW201	Project	0	0	3	12	75	25	0	100
Total			9	3	4	60	200	300	0	500

**Note:** L: Lecture T: Tutorial P: Practical CA: Continuous Assessment EX: Exam

\* Denotes a pre-existing module in another department (Civil, Mechanical, Electrical and IT) at JNP which will be adopted for the Diploma Programme in Surveying.

## 10. Diploma in Materials and Procurement Management

### Year I Semester I

Sl No.	Code	Name of the Module	Credit	Contact hours			Marks			
				L	T	P	Theory		Pract. CA	Total
							CA	EX		
1	ACC101	Basic Accounting	12	3	1	0	50	50	0	100
2	MAS101	Materials and Specifications	12	2	1	2	25	50	25	100
3	ECO101	Basic Economics	12	3	1	0	25	75	0	100
4	MGT101	IT Fundamentals and Office Productivity Tools	12	2	0	2	50	-	50	100
5	MAM101	Materials Management	12	3	1	0	25	75	0	100
Total			60	13	60	13	4	4	175	250

### Year I Semester II

Sl No.	Code	Name of the Module	Credit	Contact hours			Marks			
				L	T	P	Theory		Pract. CA	Total
							CA	EX		
1	DZG101	Dzongkha for Communication*	12	2	2	0	50	50	0	100
2	PCM101	Purchase Management	12	2	1	2	25	50	25	100
3	ACS101	Academic Skill *	12	2	2	0	100	0	0	100
4	MAM102	Inventory Management	12	3	1	0	25	75	0	100
5	MAT102	Statistics	12	2	1	2	25	50	25	100
Total			60	11	60	11	7	4	225	225

**Year II Semester I**

Sl No.	Code	Name of the Module	Credit	Contact hours			Marks			
				L	T	P	Theory		Pract.	Total
							CA	EX	CA	
1	DBM201	Database Management	12	2	1	2	30	50	20	100
2	PCM202	Introduction to Procurement Rules and Regulations	12	2	1	2	25	25	50	100
3	MAM203	Warehouse Management	12	3	1	0	25	75	0	100
4	ACC202	Tally	12	2	0	3	50	0	50	100
5	MNG202	Principles and Practices of Management	12	3	1	0	25	75	0	100
Total			60	12	4	7	155	225	120	500

**Year II Semester II**

Sl No.	Code	Name of the Module	Credit	Contact hours			Marks			
				L	T	P	Theory		Pract.	Total
							CA	EX	CA	
1	LGM201	Logistics Management	12	3	1	0	25	75	0	100
2	NGS201	Negotiation Skills	12	3	1	0	0	0	100	100
3		Elective	12	3	1	0	25	75	0	100
4	OJT201	On-the-Job Training	12	0	0	1	100	0	0	100
5	PRW201	Project Work	12	0	1	3	100	0	0	100
Total			72	9	4	4	250	150	100	500

**Electives Modules:**

1. Universal Human Values and Professional Ethics\* (UHV401).
2. Analytical Skills\* (ASK101)
3. Entrepreneurship Development\*(EDP201)

**Note:** The modules marked with \* are the validated modules offered in other programmes in the Institute / University wide. They are adopted for this programme without any modification.