Software Requirements Specification

for

Summer Term Processing

Version 1.0

Software Engineering (SWE)

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Revision History

Name	Date	Reason For Changes	Version
Team 20	27-08-18	Initial preparation	V 1.0
Team 20	1-09-18	Few Modifications	V 1.1
Team 20	18-11-18		V 1.2

1. Introduction

1.1. Purpose

This software package is developed from scratch exclusively for the LNMIIT in order to,

- Enable the students to request to add a course from the list of courses online and subsequently know the status of registration by themselves through secure internet-based access to MIS login.

- Sends an auto-generated electronic mail to the registered students reminding them of the last date of registration.

- Monitor, measure and improve the efficiencies of constituent registrations and summer term processing activities of the institute like grade processing, viewing and downloading timetable, course registration.

- Increase the average number of registrations processed per day from the current value to a more efficient value by deploying this software package.

- Reduce the overall turn-around time for the summer term processing from the current average time to a more efficient time.

1.2. Document Conventions

The following documentation conventions are followed in preparing this SRS:

a) All key-words related to the institute are formatted in italics.
b) The priority of a requirement is specified at the end of that requirement in curly braces and using the notation { Priority : str}, where ‘str’ refer to {low,medium,high}.

1.3. Intended Audience and Reading Suggestions

This document is created for,

i) The students of LNMIIT who want to repeat a particular core or elective course from the courses offered in summer term.
ii) The faculty staff of the LNMIIT institute to view and manage the grades of students in their courses.
iii) The Head of Departments of institute to create the offered course list for their departments and for each batch.

iv) The Dean of academics affairs Committee of the LNMIIT for their review and approval of courses in summer term.
v) The software development team for their use in analyzing the requirements.

1.4. Product Scope

The scope of the to-be-developed 'Summer Term Processing' software package is:

i) To cater to all types of activities offered by the LNMIIT institute for summer term processing.
ii) To enable the LNMIIT students and faculty to securely access this centralised summer term portal using internet in order to request and review the applications of addition or replacement of courses respectively, and then to validate, approve-reject the by DOAA.
iii) To subsequently know the status of their application through portal, and make payments as and when required through the payment gateway.
iv) To view the grades received in registered courses and for faculty to update the grades of registered students.
v) To allocate faculty to the respective courses.
vi) To view timetable during summer term and endterm and midterm schedule.

1.5. References

The following reference manuals of the LNMIIT are used in preparing this SRS:
i) Interview with Dean of Academic Affairs (DOAA), 3:37 pm to 3:50 pm, 23rd Aug 2018..
ii) Interview with Dean of Academic Affairs (DOAA), 4:40 pm to 5:00 pm, 29th Aug 2018.
iii) Minutes-of-the-Meeting between the LNMIIT SWE Course instructor and the Academic Staff of the LNMIIT, held on August 18th 2018 at the LH-1.

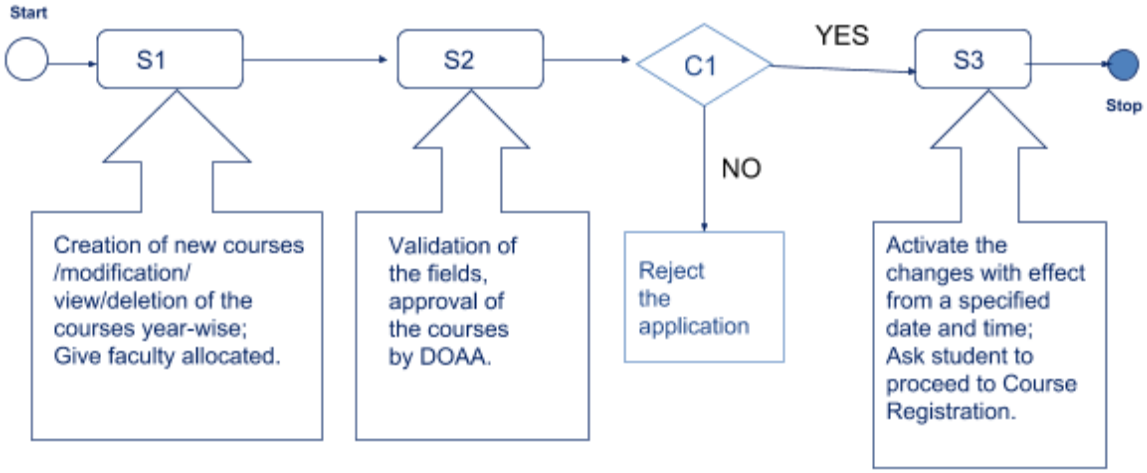
2. Overall Description

2.1. Product Perspective

This is a new, self-contained product to ease the process of Summer Term Processing for students, faculties, HODs, DOAA, and AR Acads.

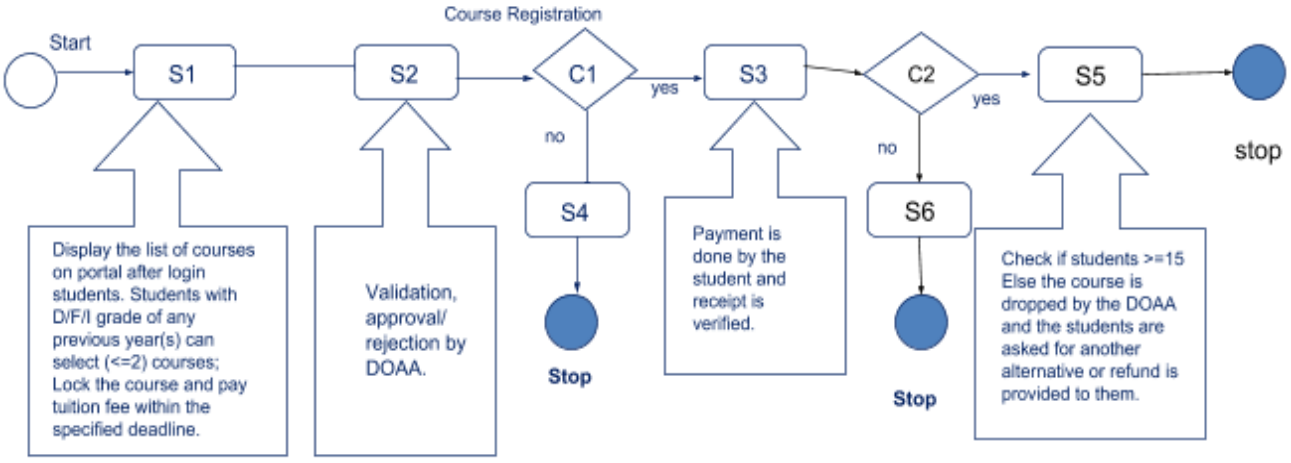
The following diagrams describes the high-level process of the Summer Term Processing functions of the LNMIIT:

Part – I: Creation and Maintenance of Summer Term Courses:

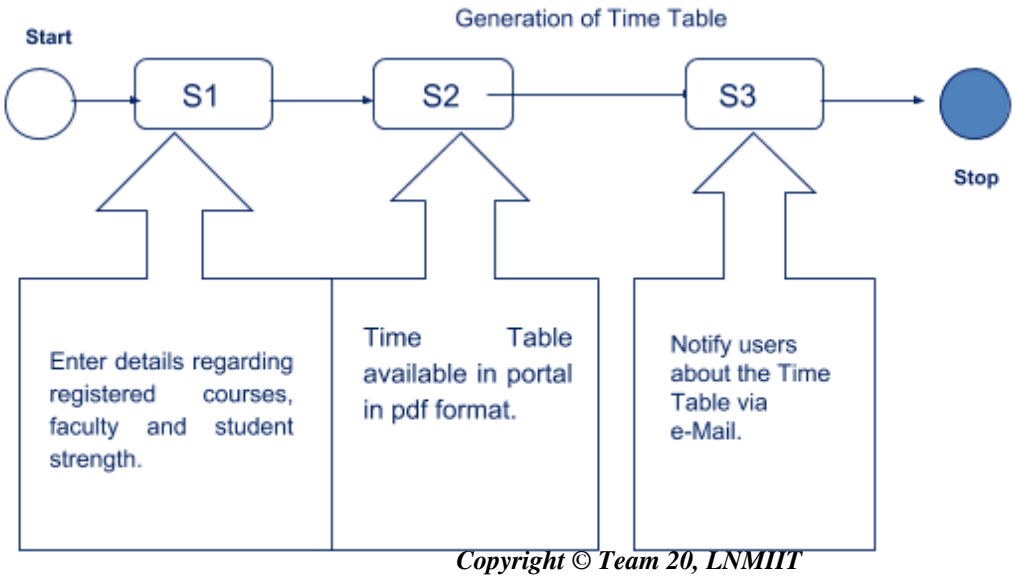


Part - II: Student Registration:

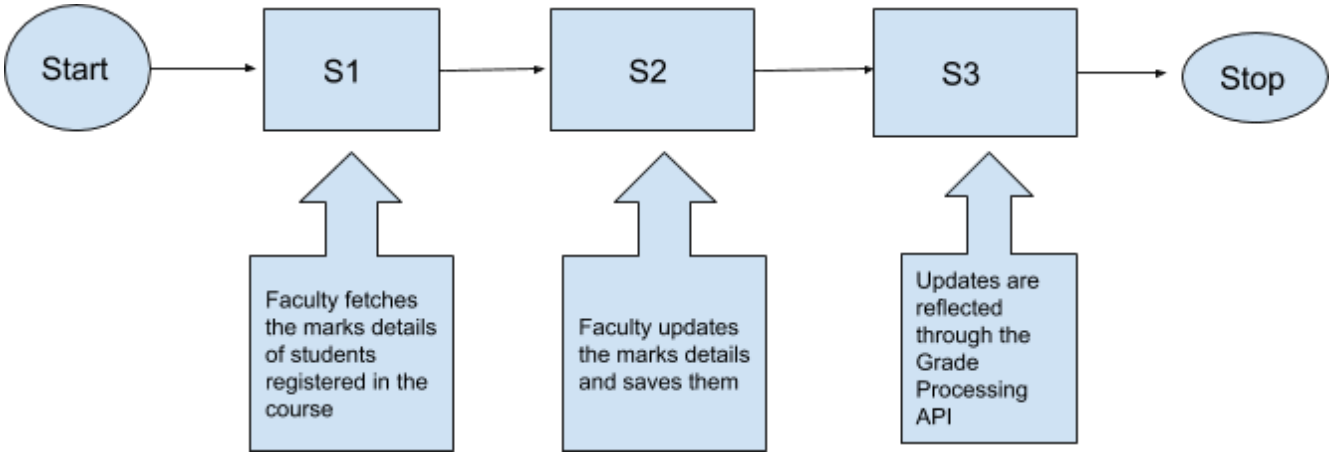
Stop



Part - III: Time Table:



Part - IV: Grade Processing



2.2. Product Functions

This software package is expected to offer the following services:

1. Course List :
   Facility for HOD to add to, modify and view list of courses, for DOAA to approve or reject the courses from proposed list, and for students and faculty to view offered courses to them respectively.

2. Course-Faculty Allocation:
   HOD provides the assigned *faculty list* to each of the summer term course.

3. Class Time-Table, Mid-Term, End-Term Time-Table Generation:
   Facility for all to fetch the above mentioned time tables for the summer term.

4. Course Registration:
   Facility for students to register in the summer term courses.

5. Grade Processing:
   Facility for faculty to view and update grades of registered students in their courses and for students to view their reports.

2.3. User Classes and Characteristics

This software package will be used by four categories of users:

a) **Head of Department (HOD):** These users will use this software package to view, add, modify, delete, select the different courses offered based on year, type of course (OE, PE, IC, PC), and give name and number of faculties teaching the course offered by their department as per the curriculum. They will save and submit the list to DOAA within deadline defined by DOAA.

b) **Dean of Academic Affairs (DOAA):** The DOAA can view, select, remove courses per department according to year. The DOAA is provided with the statistics regarding the number of students who have been awarded with D/F and I grades for the course lists submitted by the departments. These approved courses are submitted for *course registration*.

c) **Students:** These users will use this software package to view the courses available to them for registration and can select at max 2 courses (all year students). If a student is of 4th year and needs only 3 courses to complete their B.Tech then by the approval of DOAA and Director of LNMIIT, these students may be permitted to opt 3 courses at max.

d) **Faculty:** These users are authorised to view the list of course(s) and the students that are allotted their courses, otherwise they do not have the access.

2.4. Operating Environment

This software package is expected to work in the following atmosphere:
a. Chrome, MS Explorer, Safari, Mozilla Firefox web browser.
b. Oracle RDBMS version 10g release 2 (or above).
c. 4 Data Stores.

2.5. Design and Implementation Constraint

The design time constraints are:

i) The software package should be architected as a multi-tier system (separate DS, application and RDBMS servers) with duplication of each type of server to achieve fault-tolerance;
ii) More than 2,500 users should be able to concurrently access this package per day from all parts of the world.

iii) The software package should be accessible to B.Tech. students, HODs, faculty, and DOAA of LNMIIT.

2.6. User Documentation

i) This software package comes with online help from Administration of LNMIIT.

ii) The details of the (i) Analysis, (ii) Design and (iii) Test Cases of this software package will be delivered along with this software.

2.7. Assumptions and Dependencies

There are no assumptions made.

3. External Interface Requirements

3.1. User Interfaces

Set of User Interfaces are,

Details of the user interface design are TBD (Appendix C).

i) Student Course Registration UI

a. to login for course registration

b. view the list of offered *IC, PC, OE* and *PE* courses

c. to select *IC, PC* courses, and replace *OE, PE* courses with their previously registered OE, PE respectively (student can take 2 courses at max)

d. save and submit the registration details

e. error message if the grades for one or more courses applied are neither D, F nor I after submission of details

f. proceed to payment gateway and download the receipt

g. alert for dissolution of any registered OE, PE, IC or PC

h. optional re-registration in lieu of dissolution of previously registered courses, else apply for refund

i. view and download allotted course and faculty list

j. view and download time table

ii) HOD UI

a. view curriculum for every year for their department

b. view previous number of D, F and I grades for every course in their department

c. select *IC, PC* courses from the curriculum, and define *OE, PE* courses with a title and credits

d. modify and save the course list before final submission

e. submit the course list and correspondingly allotted faculty (1 or 2 number of faculty for a single course only) before deadline

f. notification for submission of course list if not done till then 12 hours before the deadline

g. view and download the registered students in every course offered by department

h. view and download list of offered course and allotted faculty list for their department

i. view and download the time table

iii) DOAA and AR ACADEMICS UI

a. issue a survey for last year students asking for summer term course suggestions

b. view curriculum for every year for every department

c. view previous number of D, F and I grades for every course in every department

d. approve and decline courses from the course lists submitted by every department

e. save and submit the final lists of offered courses in each department

f. view and download the registered students in every course offered by every department

g. view and download list of offered course and allotted faculty list for every department

h. view and download the time table

iv) Faculty UI

a. view list of courses allotted to the faculty

b. view the registered students in their courses

c. view and update grades of the registered students in their courses

d. view and download the time table

3.2. Hardware Interfaces

NIL.

3.3. Software Interfaces

This software package should have an interface with,

i) The Fee Submission service using Paynimo API.

ii) The Faculty Allocation service of Project 6 module.

iii) The current and previous years Grade Details API service of Project 18 and Project 4 modules respectively.

iv) The Mailing List service using GMail API.

v) The Course Replacement service of Project 4 module. (OE and PE only, no replacement for IC and PC).

vi) The Course Group Generation service using Google Group API and Classroom API.

vii) The Course Selection service of Project 9 and Project 10 modules.

viii) Time Table generation service of Project 11 module.

ix) Google form API for graduating student survey services.

3.4. Communications Interfaces

This software package should be securely accessible through internet communication channels (wired or wireless).

4. System Features

The requirements of this software package are described as per hierarchy of functionality :

i) *Course and Faculty list* creation, edit, view, submit, save features for the HODs of LNMIIT.

ii) *Course and Faculty list* view, validation, selection, deletion, save, submission, and approval feature for the DOAA of LNMIIT.

iii) *Course Registration*, *Course Allocation, Fee Submission* features and view *Course and Faculty list* for the B.Tech., M.Tech., MSc., Dual Degree, and PhD. students of LNMIIT.

iv) *Course and Faculty list* and *Student List* access to the respective faculty of LNMIIT.

v) *Grade updation* and viewing access to respective faculty and only viewing to registered students.

Business Use Case # 1: All the Requirements for Course List Generation and Approval:

4.1. View Students' Old grades

4.2.1 Description and Priority

The TBD (to-be-developed) software package should facilitate the DOAA and HODs of LNMIIT to,

i. view number of *students* with D, F and I grades for every course in the curriculum for *DOAA*

ii. view number of *students* with D, F and I grades for courses in the curriculum that belong to their department for *HOD*

The priority of this requirement is High.

4.2.2 Situation-Response Sequence

Sr No.	Stimulus from the User	Response from the Software
1	logs-in on the software	Software validates the user through log-in API
2	if the user is the *DOAA* then the user can select any course from the curriculum	Software displays the number of D, F, and I grades awarded to students who've applied for the course previously
3	if the user is the *HOD* then the user can select any course from the curriculum in their department only	Software displays the number of D, F, and I grades awarded to students who've applied for the course previously

4.2.3 Functional Requirements

As per the above table described in 4.2.2.

4.2. Create Summer Term Course Lists

4.2.1 Description and Priority

The TBD (to-be-developed) software package should facilitate the *HODs* of LNMIIT to,

i) select *IC* and *PC* courses from the curriculum of every year in their departments;

ii) define *OE* and *PE* courses for students of every year in their departments;

iii) submit final course list and the corresponding faculty allocation list before the deadline;

The priority of this requirement is High (without this facility, other requirements do not work).

4.2.2 Stimulus/Response Sequences

Sr No	Stimulus from the User	Response from the Software
1	HOD logs in as head of their respective departments;	Software validates the user through log-in API
2	HOD selects *IC* and *PC* courses from the curriculum available for every year in the department	Software will add the courses in the list of offered courses
3	HOD gives title and cif for *OE* and *PE* courses for each year	Software will add the courses in the list of offered courses
4	If user wants to remove any *IC* or *PC* from the list, the HOD deselects those courses	Software will remove the course from existing list.
5	If user wants to remove any *OE* or *PE* from the list, the HOD deletes those courses	Software will remove the course from existing list.
6	If user wants to edit any *OE* or *PE* in the list, the HOD changes title or cif for those courses	Software will modify the courses in the list of offered courses
7	HOD selects the faculty for offered courses	Software will add the faculty in the faculty field for the offered courses

8	HOD saves and submits the final list of courses and attached faculty details	Software updates the details in the data store of Summer Term Course Registration.

4.2.3 Functional Requirements

As per the above table described in 4.2.2.

4.3. Approve and Decline courses from the Summer Term Course Lists

4.3.1 Description and Priority

The TBD (to-be-developed) software package should facilitate the *DOAA/AR ACADS* of LNMIIT to,

i) View, select and remove courses from the submitted course lists by every department for every year,

ii) Approve the final list of courses to be offered for registration.

The priority of this requirement is High.

4.3.2 Situation-Response Sequence

Sr No	Stimulus from the User	Response from the Software
1	User logs-in on the software as *DOAA/AR Acads*	Software validates the user through log-in API
2	The user can view the list of courses offered by each department, and the corresponding faculty that will teach	Software displays the following options: (a) view all OR (b) view per department OR (c) view per year OR (d) view per faculty

3	The user selects a course following general criteria of maximum students with D/F/I grade;	The courses selected are added by software to be a part of Summer Term Courses; If there is any error, an error message will be displayed;
4	The user removes a course following general criteria of maximum students with D/F/I grade;	The courses removed are removed by software from Summer Term Courses;
5	*DOAA/AR Acads* submits the final list of courses and attached faculty details	Software updates the details in the data store of Summer Term Course Registration.

4.3.3 Functional Requirements

As per the above table described in 4.3.2.

4.4. Conduct a survey for last year students

4.4.1. Description and Priority

The TBD (to-be-developed) software package should facilitate the *DOAA/AR Acads* of LNMIIT to,

i. issue a survey for all last year students having D, F or I grades in any of the courses in any semester

The priority of this requirement is Medium.

4.4.2. Stimulus/Response Sequences

Sr No	Stimulus from the User	Response from the Software
1	User logs-in on the software as *DOAA/AR ACADS*	Software validates the user through log-in API

2	User selects the year to view a filtered list of all the courses previously offered to the students of that year	Software displays all the courses previously offered to students of that year AND the number of D, F, and I grades in all the courses offered to those students
3	User selects courses from the filtered list and selects to create a google form to be submitted before a time and date	Software will send the google form to all the students of the same year who were awarded D, F, or I grades in the selected courses

4.4.3. Functional Requirements

As per the above table described in 4.4.2.

Business Use Case # 3: All the Requirements of the Summer Term Course Registration:

4.5. Submit Courses for Registration

4.5.1. Description and Priority

The TBD (to-be-developed) software package should facilitate the students of LNMIIT to,

i. view available courses for each year for registration

ii. select at max 2 courses from the list

iii. submit the selected courses for allotment.

The priority of this requirement is High.

4.5.2. Stimulus/Response Sequences

S No	Stimulus from the User	Response from the Software

1	The user signs in as student;	Software authorises the user;
2	The user can view the list of courses offered by their department, the faculty that will teach, and credits of course;	Software displays the following options: (a) view all OR (b) view per PE/OE/IC/PC
3	The user selects *IC* or / and *PC* courses, or / and selects *OE* or / and *PE* courses for replacement with previously studied OE and PE respectively from the drop-down list. (at max 2 courses in total)	Software adds and saves selected courses for submission.
4	The user submits the list before deadline set by DOAA/AR Acads.;	The courses selected are saved by software on a DS to be a part of Summer Term registered courses for the student if no error is displayed; (Error message is displayed if students didn't get an F, D or I grade for any of the submitted courses)

4.5.3. Functional Requirements

As per the above table described in 4.5.2.

4.6. Dissolution of Course

4.6.1. Description and Priority

The TBD (to-be-developed) software package should facilitate the DOAA/AR Acads. of LNMIIT to,

i.) Remove a course from available list of offered courses after the end of registration process

The priority of this requirement is High.

4.6.2. Stimulus/Response Sequences

S No	Stimulus from the User	Response from the Software
1	User logs-in as DOAA/AR Acads	Software validates the user through log-in API
3	The user can select courses from the displayed list of courses with number of students <=15 to dissolve them	Software removes the selected courses from the list of offered courses
4	The user submits the final list of Summer Term courses	(a) Software updates the list of courses in the data store of Summer Term courses (b) Software informs the students who were allotted those courses through the mailing list using GMail API to re-register or apply for refund.

4.6.3. Functional Requirements

As per the above table described in 4.6.2.

4.7. View Allocated Student list

4.7.1. Description and Priority

The TBD (to-be-developed) software package should facilitate the faculty, HODs, DOAA/AR Acads. of LNMIIT to,

i.) view the list of students allocated to the course of each department

The priority of this requirement is High.

4.7.2. Stimulus/Response Sequences

S No	Stimulus from the User	Response from the Software
1	The user can view the list of students registered for their department's courses, the faculty that will teach, and credits of course;	Software displays the following options: (a) view all OR (b) View per PE/OE/IC/PC OR (c) view per year OR (d) view per faculty;
2	The user signs in as faculty/HOD of department/DOAA/AR Acads.;	Software authorises the user;
3	The user can view the student details of the course they are teaching only for faculty or under their department for HOD;	Software displays students details associated with that course only if they are a part of finally verified Summer Term courses list after the whole process is complete; If there is any error, an error message will be displayed;

4.7.3. Functional Requirements

As per the above table described in 4.7.2.

4.8. View Course list

4.8.1. Description and Priority

The TBD (to-be-developed) software package should facilitate the faculty, HODs, DOAA/AR Acads, Student of LNMIIT to

(i) view the list of courses allocated to the faculty, and other course details as per department.

The priority of this requirement is High.

4.8.2. Stimulus/Response Sequences

S No	Stimulus from the User	Response from the Software
1	The user can view the list of courses offered by their department, the faculty that will teach, and credits of course;	Software displays the following options: (a) view all OR (b) View per PE/OE/IC/PC OR (c) view per year OR (d) view per faculty;
2	The user signs in as faculty/HOD of department/DOAA/AR Acads. or Student;	Software authorises the user;
3	The user can view the course details of the course they are teaching only;	Software displays course details and students details associated with that course only if they are a part of finally verified Summer Term courses list after the whole process is complete; If there is any error, an error message will be displayed;
4	The user can view the Google classroom of their course by following the link on their course page;	If faculty is verified, then course page of software contains Google classroom site and students linked to it;

4.8.3. Functional Requirements

As per the above table described in 4.8.2.

4.9. View and Download Time Table

4.9.1. Description and Priority

The TBD (to-be-developed) software package should facilitate the faculty, HODs, DOAA/AR Acads, Student of LNMIIT to

(i) View and Download Time Table for Classes, Mid Term, End Term

The priority of this requirement is Low.

4.9.2. Stimulus/Response Sequences

S No	Stimulus from the User	Response from the Software
1	The user signs in as faculty/HOD of department/DOAA/AR Acads. or Student;	Software validates the user through log-in API;
2	The user can view the time table;	Software displays the cumulative time table of all years and departments; If there is any error, an error message will be displayed;
3	The user can download the course details of the course they are teaching only;	Download the cumulative time table of all years and departments; If there is any error, an error message will be displayed;

4.9.3. Functional Requirements

As per the above table described in 4.9.2.

4.10. Apply for Re-registration or Refund

4.10.1. Description and Priority

The TBD (to-be-developed) software package should facilitate the Students, of LNMIIT to

(i) Option for re-registering for Summer Term

(ii) Or apply for refund for courses

The priority of this requirement is High.

4.10.2. Stimulus/Response Sequences

S No	Stimulus from the User	Response from the Software
1	The user signs in as a Student;	Software validates the user through log-in API
2	The user can view the list of courses offered by their department, the faculty that will teach, and credits of course that have at least 15 students registered and have to select from it;	Software displays the following options: (a) view all OR (b) view per PE/OE/IC/PC;
3	The user selects *IC* or / and *PC* courses, or / and selects *OE* or / and *PE* courses for replacement with previously studied OE and PE respectively from the drop-down list. (at max 2 courses in total);	Software adds and saves selected courses for submission;
4	If the user does not wish to choose from the final list of approved courses, then they can ask for refund;	Software sends account details of that student to the AR Acads. requesting for initiation of refund; Student is notified of refund progress;

4.10.3. Functional Requirements

As per the above table described in 4.10.2.

4.11. Student Grade Processing

4.11.1. Description and Priority

The TBD (to-be-developed) software package should facilitate the Students and Faculty of LNMIIT to

1. Student can view the grades offered to them in their registered courses.
2. Faculty can fetch and update the grades of students in their courses.

The priority of this requirement is High.

4.11.2. Stimulus/Response Sequences

S No	Stimulus from the User	Response from the Software
1	The user signs in as a Student or faculty;	Software validates the user through log-in API
2	Student selects to view grades for the summer term	Software displays the report with grades of the student in the courses that he/she has registered in
3	Faculty selects to fetch the list of grades of registered students in the course	Software displays the list with access to update the grades of students
4	Faculty submits the grade list for their course	Software updates the grades in the summer term course through the Grade Processing API

4.11.3. Functional Requirements

As per the above table described in 4.11.2.

5. Other Nonfunctional Requirements

5.1. Performance Requirements

Each particular action either by HOD or Student will be given a specified time limit of 72 hours from the alloted date and time (IST). The processing should be smooth and efficient under the following load on the software:

i) There are 50 users accessing this software per hour.

(Initially, HOD will be allowed to function on the system for 72 hours from the alloted date and time(IST) then, student would be given permission to add/drop the course they want for the next 72 hours.)

ii) The average turnaround time for each submission is less than 3 seconds.

iii) There are 600 summer term *course registration* applications in the system.

5.2. Safety Requirements

This software makes the Summer Term Processing 'paperless'; however, as per the rules of LNMIIT , this software should,

i) Create a PDF of the courses registered with their respective faculty member and credits along with the fee receipt for each Summer Term Applicant;

5.3. Security Requirements

This software should,

i) Authenticate each user, who logs in;

ii) When the user performs any actions, Authorize him / her to perform the actions allowed for the user and display an error message if found to be not authorized;

iii) Use a 64 bit key to encrypt all data of all the fee transactions transferred to and from the student and the DS; similarly, encrypt all the data that is stored in the database tables;

5.4. Other Software Quality Attributes

NIL

5.5. Business Rules

5.5.1. The HOD creates the course lists for their department and atleast 1 IC/PC/OE/PE course is offered in the summer term.

5.5.2. The DOAA approves the course list for each department and this process takes into account the previously offered courses with maximum number of students who have been allotted D/F grades.

5.5.3. The DOAA can only approve and reject the courses added by the HOD for summer term and can not add other course.

5.5.4. Students are allowed to take those core courses in summer term in which they have already appeared before and have received D/F grade.

5.5.5. Students are allowed to take elective courses in summer term wih replacement with previously taken electives in which they received D/F grade.

5.5.6. Students can take 2 courses at max in summer term.

5.5.7. The summer term courses that are reported to have a student strength of 15 or less are freezed till the DOAA approves or dissolves some or all of them depending on the criteria of graduating year of registered students.

5.5.8. The respective HOD, students and faculty are informed about dissolution of their courses and the students are prompted to ask for refund or replace these courses with other offered courses.

5.5.9. The faculty is allowed to access the student and course details of those he/she teaches, and can view and update the grades of students in their courses.

5.5.10. The students are allowed to view their grades in their courses.

5.5.11. The DOAA and HOD are not authorized to view student and course details of their departments. (DOAA has access to all departments)

6. Other Requirements

NIL

Appendix A: Glossary

- A **Software requirements specification (*SRS*)**, a requirements specification for a software system, is a complete description of the behavior of a system to be developed and may include a set of use cases that describe interactions the users will have with the software.

Source: http://en.wikipedia.org/wiki/Software_requirements_specif ication

- A **Head of Department (*HOD*)**, it is a division of a university or school faculty devoted to a particular academic discipline. In the United Kingdom and other Commonwealth countries, universities tend to use the term faculty; faculties are typically further divided into schools or departments.

Source: https://en.wikipedia.org/wiki/Academic_department

- A **Dean of Academic Affairs (*DOAA*)**, it is a branch of university or college employees responsible for the maintenance and supervision of the institution and separate from the faculty or academics, although some personnel may have joint responsibilities.

Source:
https://www.encyclopedia.com/education/encyclopedias-almanacs-transcripts-and-maps/academic-dean

- A **Faculty** is a division within a university or college comprising one subject area, or a number of related subject areas.

Source: **Prof. Ravi Prakash Gorthi**

- A **Student** is a person formally engaged in learning, especially one enrolled in a school or college. Students at LNMIIT refer to those pursuing B.Tech., M.Tech., PhD., M.Sc. degrees.

Source: https://www.dictionary.com/browse/student

- **Institute Core (*IC*)** these courses are mandatory for all the students and are provided by the institute.

Source: software engineering course instructor - **Prof. Ravi Prakash Gorthi**

- **Program Core (*PC*)** these courses are specific to the branches and are mandatory to the students of the respective branches.

Source: software engineering course instructor - **Prof. Ravi Prakash Gorthi**

- **Other Elective (*OE*)** these courses are offered to all the students and various options are there from which the students can select what they want to do.

Source: software engineering course instructor - **Prof. Ravi Prakash Gorthi**

- **Program Elective (*PE*)** these courses vary for each branch and students can select among various options by giving their preferences.

Source: software engineering course instructor - **Prof. Ravi Prakash Gorthi**

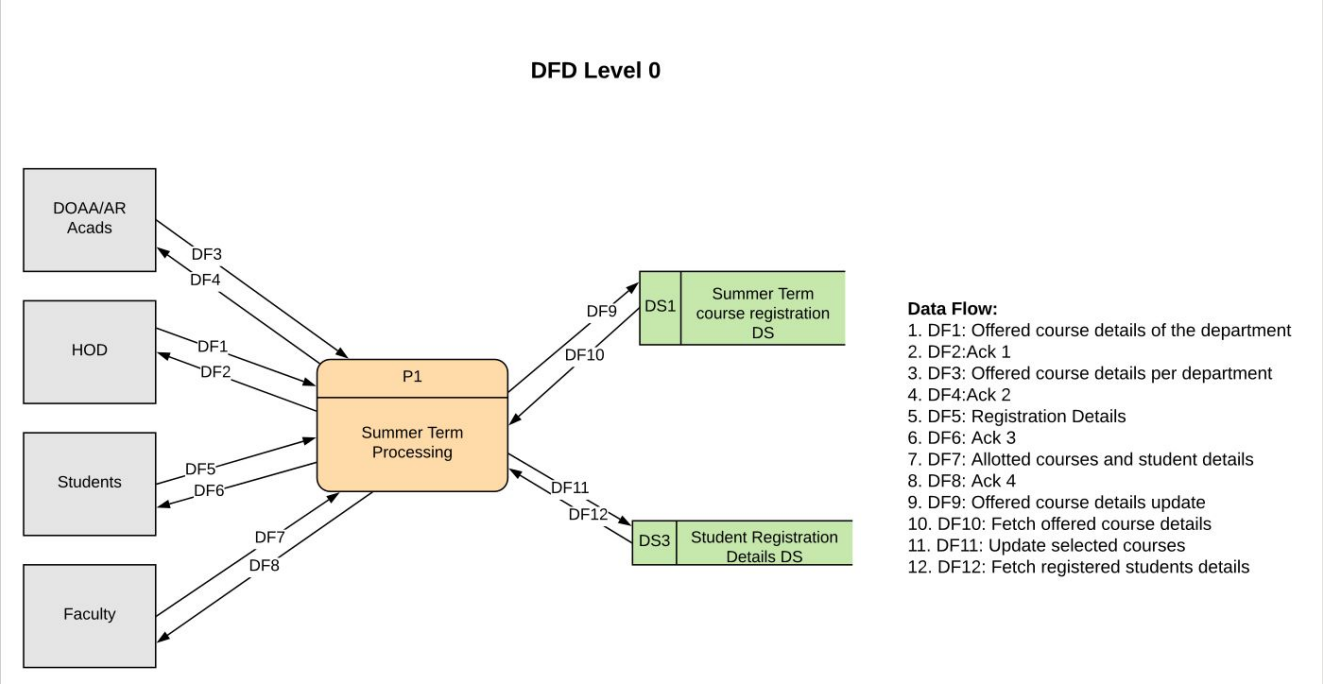
- **Data Stores Description:**

Data Store	Data item
DS 1: Course registration details	1.Course name 2.Course type(OE,PE,IC,PC) 3.Course faculty 4.Course credits
DS 2: Student registration details	1. Name 2. Roll number 3. Current year 4. Number and Type of subject selected 5. Title of subjects selected 6. Eligibility for registering to summer term course 7. Replacement of which course if applying

	for OE/PE

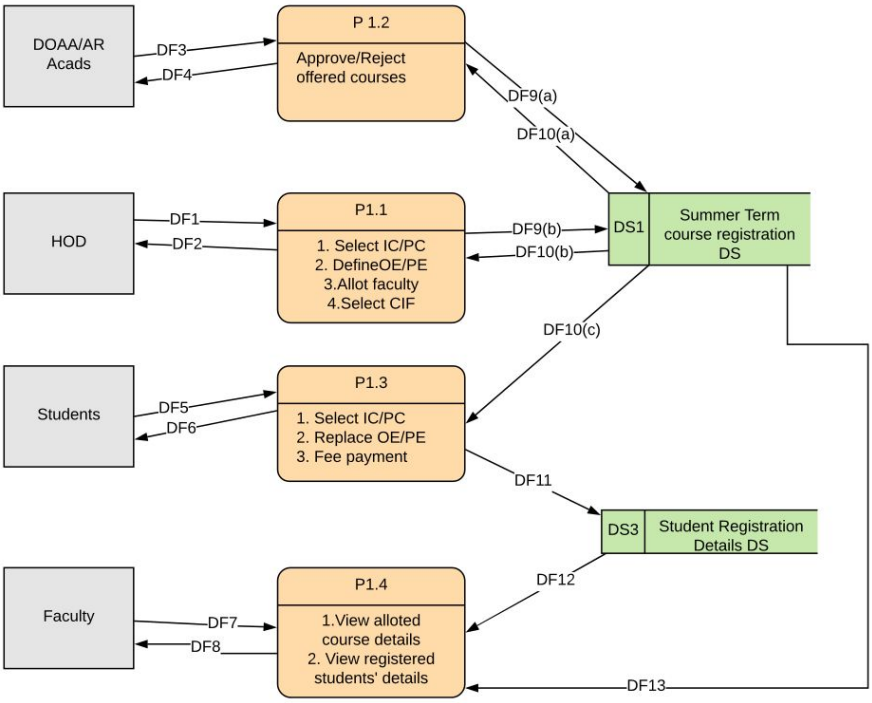
Appendix B: Analysis Models

1. Level 0 DFD of Summer Term Processing



2. Level 1 DFD for Summer Term Processing

DFD Level 1



Data Flow:
1. DF1: Offered course details of the department
2. DF2:Ack 1
3. DF3: Offered course details per department
4. DF4:Ack 2
5. DF5: Registration Details
6. DF6: Ack 3
7. DF7: Allotted courses and student details
8. DF8: Ack 4
9. DF9(a): Offered course details update
10. DF10(a): Fetch offered course details per department
11. DF9(b): Update offered course details
12. DF10(b): Fetch offered course details
13. DF10(c): Fetch courses offered per batch
14. DF11: Update selected courses
15. DF12: Fetch registered students details
16. DF10(d): Fetch offered course details

3. Level 2 DFD for Summer Term Processing

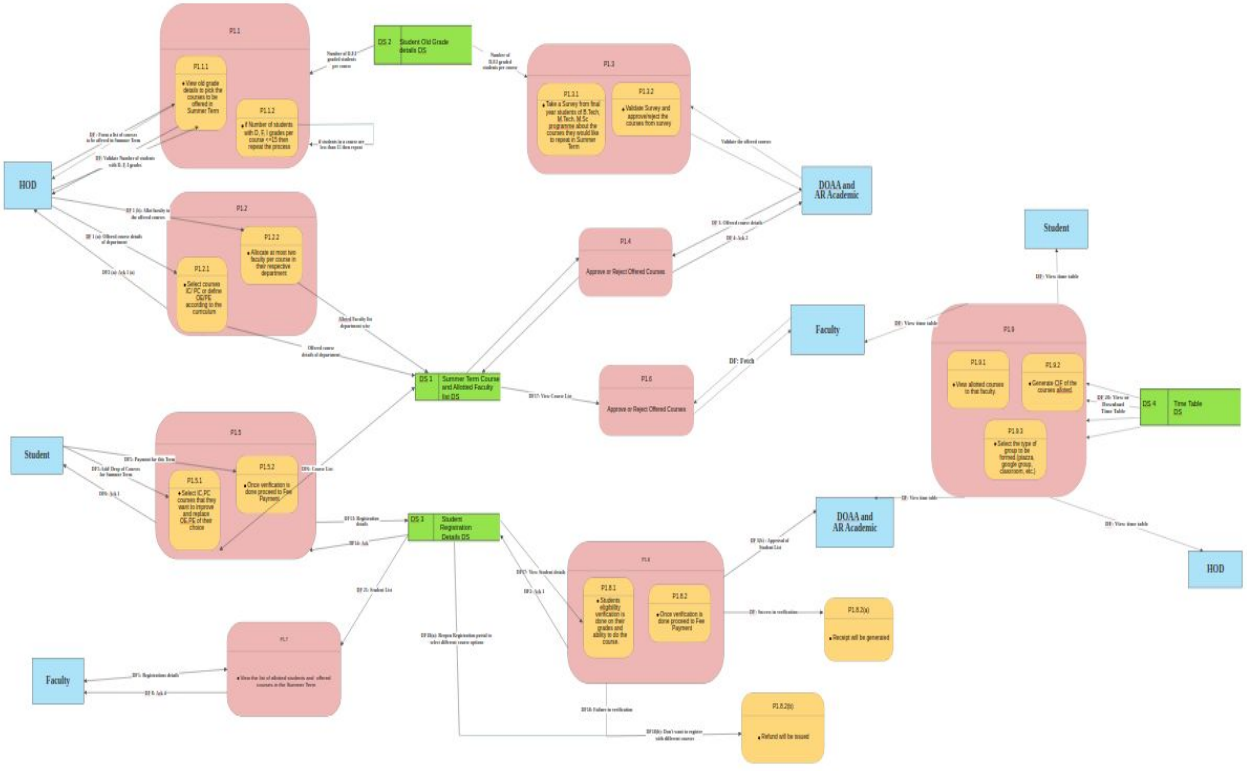


Fig 3: Level 2 DFD of Summer Term Processing

Appendix C: To Be Determined List

I. Details of the user interface design