**Software Requirements Specification**

**for**

**academics.daiict.ac.in**

**Version 2.0**

**SEN team #1**

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**Revision History**

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| **Name** | **Date** | **Version** | |
| **Akash Gaurav** | **31.03.11** | **v 2** | |
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1. **Introduction**

Software requirement specification (SRS) document is a key element in the requirement engineering phase of the software development cycle. It serves as a milestone to product developers to advance into the subsequent activities of their process model. The main motive of coming up with SRS is, it gives the developers the basic idea of what tasks the end user or the client wants the system to perform and thus eases the development process.

* 1. **Purpose**

Any educational institution requires an easily accessible and manageable interface for providing information about the various courses offered, course materials, student registration details, student profiles, results etc. Most of data of this kind and the related services are handled online these days in almost every college which improves processing speed, saves time  
  
DA-IICT has been running two websites till date for managing courses and student results and profiles. Though the currently being used web applications are working fair enough but getting all information on a single website is not yet done. Therefore, this project aims at providing vital information to both student and to the faculty on a single portal along with some add on facilities.  
  
This document describes the development of a software requirements specification for developing a website which integrates E-campus and courses website.

.  
**1.2 Definitions:**

* + User: General users of the system who is logged in.
  + System: our web application.
  + Guest**:** General users of the system who is not logged in.
  + Student:User of the system who is logged in as a student.
  + Faculty:User of the system who is logged in as a faculty.
  + Admin : Users of the system who are authorised as administrators

**1.3 Intended Audience and Reading Suggestions**

This SRS is designed to serve software developers for developing the system which is an integration of courses website and E-campus website.  
This document is intended to be used by the developers to validate their artifacts from time to time. It may also be used by the client to have a presumable idea of what is going to be delivered at the end of the project.  
  
To understand the system in depth readers should begin with the overall description and go through the product features, requirements and various constraints.

**1.4 Product Scope**

Some of the salient features and benefits of our project are listed below.

* It is an extension to currently being used E-campus and courses website with some additional features.
* Main motivation of the project is to bridge the gap and enhance communication between various user communities.
* The users of the project would be Administrator, Students, Faculty and Teaching Assistants
* It would be more user friendly than currently used system.
* Removing redundancy as the user has to access only one site for both registration of courses and for accessing lecture notes is one of the aims of the project.
* It would help students with registration process.
* Every user will have a profile on this web-site and can see other user's profile also.
* Appropriate mailing lists can be prepared for a particular course for efficient communication between the instructor and the registered students.

* 1. **References**
* IEEE Recommended Practice for Software Requirements Specifications

**2 Overall Description**

**2.1**. **Product Perspective**

Dhirubhai Ambani Institute of Information and Communication Technology presently has two major websites serving the purpose of course information management and results declaration and course registration: courses.daiict.ac.in and the e-campus website. This product is an upgrade integrating the functionalities of these two existing websites and also introducing some new features**.**

* 1. **Inputs to the system**
  + The authorised person (of the institute) will feed the database of the courses being offered in the beginning of the semester
  + The timetable for the lectures, labs and tutorials
  + Academic calendar
  + List of holidays
  + From time to time, the faculty will input the documents relevant to their courses
  + The students will upload their assignments
  + Authorities can give texts to be displayed as announcements
  1. **Product Features**

Major features of *courses.daiict.ac.in* include the following pages/subsections:

* Course Categories
* Search for courses
* Login window
* Overview of  courses of students

Major features of *e-campus website* include the following pages/subsections :

* Login
* Home
* Student Detail
* Registration
* Course Adjustments
* Result
* Hostel
* Fees
* Attendance
* Utilities (change password)

Following are the features in the *proposed* system :

* Login: This will allow only authorised users to have access and maintain security.
* Registration:
  + Register for courses
  + Complaints
  + Reminder about minimum B-tech criteria
* Fees:
  + View fee receipt
  + Dues
* Profile:
  + Manage Profile
  + View My courses
  + Upload Documents
* Results:
  + View Result
* Discussion Board
* Courses
  + Overview
  + Faculty
* Faculty can upload course related resources, calculate grades, upload assignments, start discussion etc.
* Authorities can manage course registration and fee approval.
* It will have additional features like FAQ section, announcement board, contact details of the authorities, etc.

**2.4 User Classes and Characteristics**

Users can be divided into four categories:

* **Students**: Each and every student enrolled for any course in DA-IICT has to use courses and e-campus website at some point of time and all of them will be potential users of academics website. On the basis of current usage of the two websites, it is certain that many students find current courses portal confusing and difficult to navigate and the response time of both the websites seems slow to many users. Also the usage pattern differs significantly among the students. Some log in to the two websites daily while some just consider it wastage of time. This signifies that quality of the websites can improved significantly to improve its usage.
* **Faculty**: At present faculty mainly needs to use courses website and use of e-campus website is restricted to conveners (to approve registered students), Dean (approve the list of courses which will be offered in a semester electronically) etc. But since faculty also needs to keep track of student performance and that data is available on e-campus website merging the two will be beneficial.

Two potential categories of faculty exist:

1. Those that don’t use current websites at all because of lack of functionalities and flaws.

2. Those that use it for mainly course content uploads or a few other requirements.

The faculty has a mixed opinion about including features like which allows an instructor to choose his/her grading system which automatically grades the students. Some find it useful while some say that it may not be much useful as the existing system (MS EXCEL) is very much sufficient in this regard. But almost all were interested in implementing functionalities which could provide a better overview of student’s performance according to their interest. In the present system, when the conveners have to approve the registered students, the existing system doesn’t provide subtle information about the type of registration a student does (whether he/she is regular or has a backlog). It would be cumbersome for the conveners to go through the list of 1200 students checking each individual registration to find out if there are any errors.

* **Administrator(s)** : includes many different users with different privileges and access rights.

**2.5 Operating Environment**

Website will be developed using PHP5, Javascript, HTML, CSS, Jquery and Ajax.

It will easily be accessible using the latest versions of popular web browsers like Mozilla Firefox, Google, Safari, Internet Explorer, etc. without the need of additional plugins (other than the ones that come with the browsers by default)

**2.6 Design and Implementation Constraints**

Since it’s not a corporate project, there are no corporate limitations and no hardware or software limitations either. The maintenance of the website will not be the responsibility of developers.

The website will contain only text and images (i.e. audio and videos are not embedded)

**2.7 User Manual**

All the users are well-familiar with the usage of a website and since the basic functionalities remain same as the old versions, no user documentation is required as such. But still a use manual will be developed which will elaborate the user view of website and all the features.

* 1. **Assumptions and Dependencies**
* The users have connectivity to DAIICT servers whenever needed.
* The infrastructure provided in the institute is capable of hosting the designed website with all its data and handling the expected traffics.

**3Interface Requirements**

**3.1 User Interfaces**

The system is a completely GUI based. The user interfaces will be more user friendly than those of the current system with intuitive symbols and names. Attention will be paid to making the navigation as smooth as possible and also to the visual appeal of the web pages

**3.2 Hardware Interfaces**

Since our system is a website, there are no exclusive hardware interfaces to it.

* 1. **Software Interfaces**

Our website is a standalone system and therefore has no software interfaces.

* 1. **Communications Interfaces**

The system is intended to use HTTP, HTTPS, TCP/IP, AJAX and SQL server as and when required

1. **Functional Requirements**

* **Faculty should be able to :**
  + Login, view, edit his profile
  + View course outline, list of students enrolled in his course results of all students, announcements, upcoming events
  + Upload course outline, assignments (and set deadlines for submission), results
  + Receive assignments uploaded by the students
  + Start course related discussions and post comments
  + Calculate grades
* **Students should be able to :**
  + Login, view, edit his profile
  + View the list of courses being offered at the time of registration, respective course outlines, minimum B-Tech criteria, fee receipt, upcoming events (holidays, important dates, etc) and other announcements
  + Access the lecture slides, his result
  + Add\drop courses, take up backlog courses
  + Start course related discussions and post comments
  + Upload a Start course related discussions and post comments
  + Start course related discussions and post comments
  + Upload assignments
  + View and download his fee receipt
* **Administrators should be able to :**
* Login, logout, reset password of any user
* Create new user, delete any user, edit restricted set of information on the profiles
* Approve the students for registration and fees
* Post comments and announcements on any discussion board
* Delete comments and announcements on any discussion board
* Feed data regarding timetable and academic calendar
* Upload results
* View as much information on the system as their access rights allow

1. **Non functional Requirements**
   1. **Performance Requirements**

The website should be loaded as quickly as possible. Also, uploading and downloading should be fast.

* 1. **Safety Requirements**
* Only trusted users should be given the right to access and edit the databases.
* Private data of the users should be accessible for viewing and updating to only restricted set of people.
  1. **Security Requirements**
* As, the academics related data is highly sensitive, a high level of security is required.
* The end users and administrators will be given unique username and passwords to view or edit exclusive pages depending on their permissions to access the data.
* For  security  reasons,  the  web  based  application  logs  off  the  user  after  a  certain duration of inactivity.  In order to regain entry to the system, the user must log back in.
* The system automatically logs off the user when the application is shut down by any   means. In order to regain entry to the system, the user must log back in.
* If any user logs out, then the session is said to be closed and he has to login again to use the software i.e. he/she cannot get back with simply using ‘Back’ button of the web browser.
* The  system  would  use  a  secure  database  and  application  server,  so  that  an unauthorized person cannot access, or change present data.
* System administrators are given edit privileges on the application server.
* We intend to have a backup of the entire system along with the information in order to address the problems like power failure, disk failure etc.

**5.4 Software Quality Attributes**

**Maintainability:**  
**Description:** The module shall be designed with the view that bugs may need ﬁxing, for future optimisations and for adding extra functionalities.  
**Constraints:**  Inexperience of Team Members in design.  
**Ranking:** Essential

**Extendibility:**  
**Description :** The module shall be designed with the view that the optional functional requirements will be implemented at a later date. Also the module shall be designed with a view that other tasks may be added to the module.  
**Constraints :** The current set of tasks is not independent of each other and the inexperience of Team Members in design.  
**Ranking :** Desirable  
  
**Portability**  
**Description:** The module shall be designed such that it can be added to the existing system. It is also necessary for the module to be implemented in PHP and HTML like the rest of Moodle to make it platform independent.  
**Constraints:** None  
**Ranking:** Essential  
  
**Security**  
**Description** The module shall make sure that the correct interface and functionalities are available according to the user type (Faculty or Student) that is using it.  
**Constraints:** The user type is recognised by the system  
**ranking:** Essential  
  
  
**5.5 Business Rules**

Ø   Only those students who have paid their fee are allowed to register for the courses.

Ø  The Dean and the Registrar have to approve the list of registered students.

Ø  The Dean and the Registrar have to approve the list of offered courses before declaring.

Ø  A student cannot register for courses which are not offered to his/her batch.

Ø  An instructor may administer the grades of those students who have registered for his/her course.

Ø  Teaching assistants can administer the marks of the enrolled students in a course, if the instructor permits it.

Ø  A student should satisfy the minimum and maximum credit requirement when registering.

Ø  A student should also satisfy the minimum and maximum course requirement when registering.

Ø   A student cannot register for a course which has already been taken except in the case of grade improvement or he/she has been awarded an ‘F’ grade in that course.

Ø   The students whose CPI is less than 4.0 either at the end of first year or at the end of second year of their B.Tech program are expelled from the institute.

Ø  To obtain the degree in a program, the student should meet all the requirements specified.

**ACADEMIC REQUIREMENT FOR B TECH PROGRAM:**

**1. REGISTRATION**

At the beginning of each semester, until the completion of the program, every student must register for the semester and for the courses that he/she will study during the semester.

**1.1 Procedure for Registration:**

The registration schedule is announced in advance, and registration is normally carried out within the first two days of each semester through the prescribed procedure (Student Registration System or SRS).  Late registration may be permitted for valid reasons on submission of an application to the Deputy Registrar, and only on payment of the prescribed late registration fee. In any case, registration must be completed before the prescribed last date for late registration in the Academic Calendar. Students having any outstanding dues to the Institute or hostel will not be permitted to register.

**1.2 Eligibility for Course Registration:**

A student with no backlog courses (i.e. who has passed all the previous courses) will be eligible to register for all courses prescribed in the curriculum for that semester, inclusive of the specified number of electives.  A student who has backlog course(s) or is on probation may be recommended a different set of courses, by the convenor of the UG Committee.

**1.3 Pre-Requisite Courses**:

A student registering for a course must have successfully completed the Pre-requisite course(s), if any, for that particular course. For Hard Pre-requisite, a minimum grade of DD is required; for a Soft Pre-requisite, minimum grade of DE is required

**1.4 Withdrawal from Semester and Dismissal for Failing to Register:**

a) A student who wishes to withdraw prior to registration for a semester must obtain a formal approval from the Dean (Academic Programs) before the prescribed last date for late registration for the concerned semester. Withdrawal after registration for a semester is permitted only on medical grounds or for other exceptional reasons and formal approval for such withdrawal must be obtained from the Dean (Academic Programs) before the date of commencement of the end-semester examination for the concerned semester. Withdrawal from a semester, either prior to registration or after registration is permitted for only one semester at a time. If a student does not register for a regular semester or does not withdraw with permission from the Dean (Academic Programs) as indicated above, his/her name is liable to be struck off from the rolls of the Institute.

b) A student who registers for a semester after having withdrawn in the previous semester(s) can register for the available courses as prescribed in the curriculum for that particular semester subject to the pre-requisites, if any.

c) The transcript of a student who has “withdrawn” status would show the appropriate status for the concerned semester(s). The transcript of a student who is suspended for an academic or disciplinary reason would also show “withdrawn” status.

**2. AUDITING OF COURSES AND REGISTRATION FOR PG COURSES**

**2.1 Registration of Courses for AUDIT:**

Auditing of courses allows students to gain exposure to additional subjects without increasing unduly their overall workload. Registration of courses for AUDIT is permitted from fifth semester onwards under the following conditions:

a) A student can audit a maximum of two courses during the entire program.

b) A student has to enter the courses to be audited in the Course Registration Form while registering for the semester. The word “Audit” would be specially mentioned in the remarks column of the student’s course registration form.

c) A student can register a course for audit provided the following two conditions are satisfied:

(i) the course instructor permits and approves  the registration, and

   (ii) the lecture, lab and tutorial time-tables strictly permit.

d) An audit course will not be considered as an overload.

e) If the student’s performance is satisfactory, a grade of P (Pass) would be awarded. If the performance is not satisfactory, a grade of F (Fail) would be awarded.

f) An audit course will not be considered for the purposes of calculation of Semester Performance Index (SPI)/Cumulative Performance Index (CPI). However, the course will be reflected in the Semester Grade Report and Transcript as an Audit Course provided a grade of P was obtained, otherwise the course will not  appear in the Semester Grade Report and Transcript.

**2.2 Registration for Post-Graduate level Courses for Credit:**

Students with a CPI of 7.4 or above may be permitted to register for available M Tech level courses as credit courses from seventh semester onwards.   Such courses would be regarded as a part of the prescribed course load for the regular semester. A student can register a Postgraduate level course provided the following two conditions are satisfied:

(i) the course instructor permits and approves the registration, and

(ii) the lecture, lab and tutorial time-tables strictly permit.

**3. COURSE LOAD**

**3.1 Regular Semesters:**

A student is permitted to register for additional courses over the prescribed courses in the curriculum for a regular semester provided the total number of courses does not exceed 6 and the total credits do not exceed 26. A student is permitted to underload his/her prescribed  academic load in a regular semester by dropping one or more courses provided the number of courses is at least 4 and the registered credits are not less than 12. However, after completion of his/her seventh regular semester, a student will be permitted to register for less than four courses.

**3.2  Summer Semester:**

The summer semester is a special semester of approximately eight weeks between May and July. In a Summer Semester, a student can register for a maximum of three backlog courses. For the purpose of this rule, internship would be regarded as two courses and B Tech Project Part II would be regarded as three courses. However, no other course can be taken along with industrial/rural internship.  For Summer Semester only, the term “backlog courses” indicates a course which a student has registered and failed. However, for a student who has completed eight regular semesters, the term “backlog course” would have the standard interpretation as given in the Glossary. Furthermore, students who have completed eight regular semesters are also permitted to register for grade improvement in Summer Semester.

**4. COURSE ASSESSMENT AND MODES OF ASSESSMENT**

**4.1 Course Assessment:**

The various modes of assessment used for rating students’ performance  in a course include home assignments, tutorial assignments, laboratory work, group assignments, quizzes, tests (open or closed book), viva-voce, mini projects, etc. and the end-semester examination. Attendance in lectures/labs/tutorials may also be given due weightage in course assessment. The instructor may make attendance in lectures/tutorials/labs compulsory (80% or less) and award “F” grade to students who do not achieve  the prescribed level of attendance in that course. The distribution of weightage for the assessment (continuous evaluation) through the various modes listed above will be as indicated by the course instructor at the beginning of the semester.

**4.2 Grading:**

a)  For every course taken by a student, he/she is awarded a letter grade based on his/her combined performance in all the assessments. These letter grades are assigned points on a 10-point scale as described in the table below:

b)  A student passes the course if he/she gets any grade in the range of AA to DE, but fails if he/she gets the grade F. Certain courses are  indicated as Pass/Fail courses, and in these courses a grade of P or F is awarded. F grade may also be awarded in case of malpractice in examination/continuous evaluation process. Pass/Fail courses are not considered for calculation of SPI/CPI.

c)  ‘I’ grade will be awarded in a course if the overall performance of the student is satisfactory in the course, but the student  either misses the end-semester examination due to illness, accident/death in the family or obtains such an approval from the Dean (Academic Programs) under exceptional circumstances. A student who misses the  end-semester examination must apply to the Convener of Undergraduate Committee and his/her application must be supported (i) by proper medical certificate duly approved by the Medical Authority of the Institute in the case of illness, or (ii) by adequate evidence in the event of death in the family.  An application not so supported will not be considered. Grade ‘I’ awarded for missing the end-semester examination will be converted into a performance grade (depending on the overall performance of the student in the course) after taking an examination equivalent to the end-semester examination of that particular course. An “I” grade must be converted into a performance grade by the specified date in the academic calendar for the next semester, otherwise it will be converted into “F” grade.

**5. REPEATING A COURSE**

5.1  A student must repeat a course in which he/she has obtained an F grade in a course taken for credit. Such a course is regarded as a backlog course and is subject to the regulations for registration as indicated in Paragraph 3. A backlog elective course can be replaced by another elective of the same category (technical/open/ science).

5.2 Grade Improvement:

A student whose CPI is less than 5.0 is allowed to repeat a course in which a DD or DE grade  was obtained for the purpose of grade improvement in a regular semester only. The grade obtained in the repeated attempt will be considered for the purpose of calculating the CPI. The grade obtained in the first attempt will be shown in the Transcript, but will not be considered for calculating the CPI.

**6. B TECH PROJECT**

All students are required to complete the B Tech Project (BTP) in their final years.

**7. PERFORMANCE INDICES**

**7.1 Semester Performance Index (SPI):**

The performance of a student in a semester is indicated by the Semester Performance Index  (SPI). The SPI is the weighted average of the grade points obtained in all the courses registered by the student during the semester, calculated to two decimal places.

**7.2 Cumulative Performance Index (CPI):**

An up-to-date assessment of the overall performance of a student from the time of entering  the Institute is obtained by calculating the student’s Cumulative Performance Index  (CPI). The CPI is weighted average of the grade points obtained in all the  courses registered for credit by the student after entering the Institute. The CPI is also calculated to two decimal places.

**8. MINIMUM REQUIREMENTS OF ACADEMIC PERFORMANCE**

**8.1 Academic Probation:**

A student will be placed on Academic Probation for his/her second semester with written intimation if his/her SPI at the end of first semester is less than 4.5. In subsequent semesters, a student will be placed on Academic Probation with written intimation if his/her CPI in the previous semester is less than 5.0 or if his/her SPI is less than 4.5 in the previous semester.  For every student placed on Academic Probation, the Dean (Academic Programs) will prescribe a minimum SPI the student must attain in the semester.   The minimum SPI so stipulated will be arrived at on the basis of the performance of the student in terms of her/his SPI/CPI as compared to the minimum requirements for graduation.

**8.2 Dismissal from the Institute on Account of Poor Academic Performance**:

If the performance of a student is poor so that he/she is not likely to benefit from continuing in the program any further, he/she would be required to leave the Institute. For this purpose an assessment of the student’s academic performance will initially be made at the end of the second semester of his/her stay at the Institute and thereafter at the end of every subsequent semester. This assessment will be based on the CPI and SPI obtained by the student.

**8.3 Dismissal from the Institute on account of Poor Academic Performance at the end of the Second and Fourth Semester**:

A student whose CPI is less than 4.0 at the end of second or fourth semester shall be dismissed from the Institute. However, such  a student may be allowed to register for the available backlog courses offered in the summer semester, following his/her second or fourth semester. In case the student achieves the minimum CPI of 4.0 at the end of the relevant summer semester, he/she should be allowed to re-enter the program.

**8.4 Dismissal from the Institute on account of Poor Academic Performance at the end of the Fifth or Subsequent Semesters:**

A student who is placed on academic probation for a particular semester and fails to achieve the minimum SPI prescribed for him/her in that semester would be liable for dismissal from the Institute.

**8.5 Minimum and Maximum Period for Completion of B Tech Program:**

The minimum period to complete the program is four academic years. In any case, a student should fulfil the requirements for her/his degree within a maximum period of six academic years, failing which she/he will be required to leave the Institute. The period of six years includes any semester in which the student has “withdrawn” status.

**9. AWARD OF DEGREE**

9.1 The B Tech (ICT) Degree will be conferred on a student after he/she has fulfilled the following requirements:

a) The student should have taken for credit and passed all the foundation and elective courses prescribed in the curriculum for the program. The minimum total number of course credits is 143, of which 102 correspond to foundation courses; the remaining credits must be obtained through elective courses, which may be group electives (minimum two courses), technical electives (minimum four courses),  science electives (minimum two courses) or open electives (minimum one course).  The minimum number of grade points required from course work for graduation is 715 (143  × 5.0). For this requirement, Pass/Fail courses, internships and B Tech Project are not considered. In case the student has earned the minimum number of credits, but does not have the minimum number of grade points, then he/she must take additional elective courses (up to the maximum specified for each category) in order to fulfil the requirement.

b) The student should have passed all the foundation Pass/Fail courses prescribed in the curriculum, including all prescribed internships.

c) The student should have obtained a passing grade for the B Tech Project, as prescribed in the curriculum.

d) The student should have registered for at least eight regular semesters (i.e. excluding summer semester) as a regular student and should have paid all the institute dues.

e) The student should have no case of indiscipline pending against him/her.

9.2 Final CPI and Class:

a)  For the purposes of computing the CPI at the end of the program, the student’s CPI will be computed on the basis of the best CPI obtainable from the courses taken subject to:

(i)  The total credits from course work will be taken from the least number of courses which are required to obtain 715 grade points; provided that these total credits must be at least 143, and must include 102 credits from foundation courses and must satisfy the minimum requirements for different categories of electives.

(ii) All other courses taken by the student will be categorized as extra credits and not considered for calculating the final CPI.

(iii) The CPI would be computed inclusive of the grade points earned from course work, as described in 9.2 (a)(i) and from the B Tech Project.

(iv) The requirement of earned course credits and grade points is subject to change, with the Director’s approval, in case credit structure of a course is modified.

b)  The Transcript will indicate Distinction if the student obtains a CPI of 9.0 or above and First Class if the student obtains a CPI of 6.5 or above but less than 9.0.

**9.3 Certificate of Academic Accomplishment:**

A student who is unable to complete the degree requirements within the stipulated maximum period (see Clause 8.5 above) would be eligible to receive a “Certificate of Academic Accomplishment” by applying for it. The eligibility criteria and procedure for issue of the Certificate would be as laid down by the Institute from time to time.

**6 Validation Criteria**

             The validation criteria include the following :

* Authorities are able to input relevant data as mentioned in this document
* Announcements and personalized timetables are correctly displayed
* The users are able to manage their profiles , i.e., edit them (except for some items like password for which the admin must be contacted)
* All the different classes of users can upload documents
* They can access the documents on the website, subject to their access privileges

**Appendix A: Glossary**

**Backlog Course**: A course prescribed in the curriculum which has either not been registered or failed by a student.

**Course Credit:**  Weighted sum of number of Lecture hours (L), Tutorial hours (T) and Practical hours (P) associated with the course. The weight for L and T is 1.0, and the weight for P  is 0.5.

**Grade Points:**Product of the credits and points of a letter grade awarded to the course.

**Semester:**  An academic year consists of two regular semesters of approximately 16 weeks duration each, the first (Autumn Semester) extending from July to December and the second (Winter Semester) from January to May. The summer semester is not a regular but a special  semester of approximately eight weeks usually between May and July.

**Semester Grade Report:** Official record of the grades obtained in all the courses registered by a student in a semester.

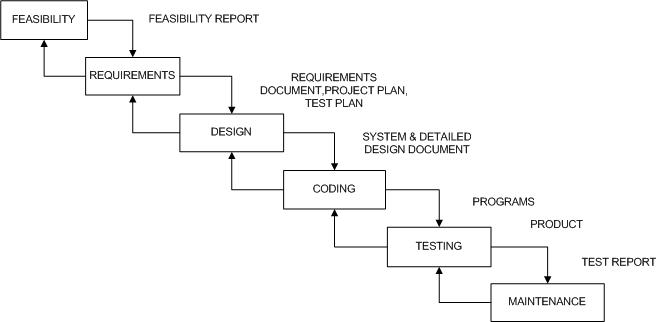
**Transcript:** Official record of the grades obtained in all the courses registered by a student and is issued after the completion of the degree requirements.

**Under-Graduate Committee (UG Committee):**  Committee of the Institute responsible for Policy Guidelines & Implementation Strategies covering the Undergraduate Program.

**Acronyms and Abbreviations**:

* + HTML: Hypertext markup language, Used to create static web pages
  + HTTP: Hypertext Transfer Protocol is a transaction oriented client server protocol between web browser and web server.
  + HTTPS: Secure Hypertext Protocol is a HTTP over SSL.
  + TCP/IP: Transmission Control Protocol/Internet Protocol, the suite of communication protocols used to connect hosts on the Internet.   TCP/IP uses several protocols, the two main ones being TCP and IP.
  + ASP.NET: Asynchronous Server Pages Used to make dynamic web pages.
  + AJAX: Asynchronous Javascript and XML is a combination of JavaScript and xml, used to transfer data between server and client asynchronously. The use of AJAX reduces the load on the server and enhances the performance on the client side.
  + SQL server:  SQL server is the database management system that delivers a flexible and cost-effective database platform to build robust on demand business applications.

**Appendix B: Analysis Models**  
 SOFTWARE LIFE CYCLE MODEL USED:

ITERATIVE WATERFALL MODEL-  
  
  
  
  
  
The iterative waterfall model consists of the above shown phases each having distinct work products at the end of each phase. In this method no simultaneous execution of two phases takes place. The second phase begins only when the preceding phase has been completely implemented. This approach is very simple to implement and there is transparency at every stage. Review meetings are conducted at the end of every stage to verify whether the development process is on track and meets the customer requirements.