



ARYABHATTA KNOWLEDGE UNIVERSITY

PATNA – 800 001, BIHAR

REGULATIONS

FOR THE DEGREE

OF

**Bachelor of Technology (B.Tech) and Bachelor of Pharmacy
(B. Pharm) Program**

(EFFECTIVE FROM ACADEMIC SESSION 2011-12)

ARYABHATTA KNOWLEDGE UNIVERSITY, PATNA

1. Introduction

The provisions contained in these regulations govern the conditions for imparting courses of instruction, conducting examinations and evaluation of students' performance leading to the Degree of Bachelor of Technology (B.Tech.) and Bachelor of Pharmacy (B.Pharm). These regulations are effective for the batches of students admitted in the Academic Session 2011-12 onwards. These are applicable to the new batches with approval of the Court of Aryabhata Knowledge University [A.K.U.], Patna from time to time.

1.1 Disciplines: The disciplines in which the courses of study are available and Degrees will be offered are:

1. Civil Engineering(CE)
2. Electrical Engineering(EE)
3. Mechanical Engineering(ME)
4. Electronics and Communication Engineering(ECE)
5. Electrical and Electronics Engineering(EEE)
6. Computer Science and Engineering(CSE)
7. Information Technology(IT)
8. Leather Technology (LT)
9. Bachelor of Pharmacy (B.Pharm.)
10. Dairy Technology (DT)

New disciplines may be added in future with approval of the Court of AK University, Patna and the Department of Education, Government of Bihar, Patna.

1.2 The provisions of these regulations shall also be applicable to any new disciplines that will be introduced from time to time and added to the list in Section 1.1.

1.3 Any regulation, as and when required, may be changed, struck off or added adopting the following the recommendation of the Academic council of the University.

1.4 Supplementary / Transitory regulations, whenever necessary may be framed and implemented by the Court of A K University, Patna.

2. COURSE STRUCTURE

2.1 The curricula for the different degree programmes as proposed by the respective departments and recommended by the Under-graduate Programme and Evaluation Committee (UGPEC) shall have the approval of the Academic Council and the Court of A. K. University, Patna. The departments will also prepare the syllabus of each subject containing the scope of studies and instructions to be imparted which must have the approval of the Court.

2.2 (a) All subjects will have Lecture- Tutorial-Laboratory/ Design components (L-T-P) to indicate the contact hours. Theory courses will have 3-0-0 (3 credits) or 3-1-0 (4 credits) structure. Design or laboratory courses will be offered as distinct (0-0-P) courses without being mixed with lecture components.

(b) Normally, subjects based on engineering or scientific principles or on thought-provoking information, where it is possible to conduct a closed book examination, will be taught as theory courses, whereas those based on applications and practice (conceptual, computational or experimental) will be covered under Design or Practical courses/ Sessional Courses.

(c) All subjects will have a credit count. Teaching of subjects will be reckoned in terms of credits.

(d) Every course, identified by a single course identifier, shall be taught by a single teacher who may be assisted by adjunct faculty, teaching assistants, postgraduate and research students, and by other faculty members.

(e) Large classes, e.g. those of first year courses, will be divided into several sections, each section being taught by one teacher. [A single teacher may handle more than one section of the same course.] Teachers of all sections of a subject will form the coordination committee for the course which will collectively take all decisions on the course. The Principal of the Engineering Colleges will choose one of the members as the Chairman of the Committee.

2.3 The prescribed coursework shall be grouped under heads - core courses and electives. The core courses, not exceeding 75% of the course load will cover all essential skills associated with a given department. A given course may be a core subject for one department and an elective for another.

2.4 The curricula to be followed in the first two semesters by the students of all disciplines shall be almost common except for B. Pharma and Dairy Technology.

2.5 The curricula for B.Tech course will include a programme of "Short term Industrial or Research Experience (SIRE)" of 08 weeks duration after the 6th semester. The experience may be obtained in any reputed industry, research organization, and any other organization of comparable repute. The place of work has to get prior approval of the

Department¹. On completion of the programme, the student shall submit a report to the department, which will earn 2 credits after evaluation and viva-voce examination in the 7th semester. Detailed procedure for administration of SIRE is given in Appendix-2.

2.6 In addition to regular course work and SIRE, a B.Tech student must carry out a major project in final year under the guidance of one or two supervisors. The project work (Appendix 3) will carry a total of 10 credits between 7th and 8th Semesters, the distribution being 4 and 6 credits respectively.

2.7 Every programme shall provide a “Seminar and Technical Writing” course [2 credits] during the 8th semesters where the students shall learn and practice essential writing and presentation skills, and attend seminars by reputed engineers and scientists organized by the Departments. Each student will also present 1 or 2 seminars and/or poster presentations before the class. Evaluation will be based on attendance in departmental and Institute seminars, presentation in seminars, poster presentations and technical writing supervised by the course teacher.

The detail course structure is given in Appendix I.

3. Registration

3.1 Every student in undergraduate programme is required to be present and register (Semester registration Form or examination form at the commencement of each semester on the date fixed and notified in the Academic Calendar. The registration process will have 3 components, viz; (a) Physical presence of the student on the campus on the first

¹ *The Training and Placement unit of the respective College will coordinate with the reputed organization, Industry for Short term Industrial training of the students.*

day of semester, (b) payment of semester fees including any unpaid dues of past semesters, and (c) selection of courses/subjects papers to be studied during the semester.

3.2 Registration of students in each semester will be organized by the Academic Section. The subject details will be verified by the Faculty members of respective Institute. Payment of dues will be verified by the Academic Section and Account Section. An appropriate semester registration form or examination form will be used for the purpose. Once registered, a student may amend the registration within a week of original registration date. The same Form shall be used for the purpose with "Amended Registration" marked on the top.

3.3 A student who does not register on the day announced for the purpose may be permitted by Principals, in consideration of any compelling reason, late registration within next 5 working days on payment of an additional fee as prescribed by the Institute. Normally no late registration shall be permitted after the fifth working day from the scheduled date, except in special cases, a serious medical problem, a family calamity, etc. to be approved by the Principals. However, under no circumstances late registration after 15 calendar days from the scheduled date of registration is allowed. In any circumstances, if the students not admitted in 1st semester within stipulated time of 15 days from the scheduled date if registration the students claim for admission treated to be cancelled automatically.

3.4 (a) Only those students will be permitted to register who have (i) clear all Institute and Hostel dues of the previous semesters, (ii) paid all required prescribed fees for the current semester, (iii) not been debarred from

registering for a specified period on disciplinary or any other ground, (iv) satisfied the academic requirements and not been struck off from the rolls of the Institute.

3.5 To be able to register in the semester a student must (i) secure 'P' [Pass, grade point 5.0] or higher grade in at least 40 credits of prescribed courses of consecutive odd and even semesters, (ii) obtain minimum 25 marks out of 70 in the end semester examination in order to get 'P', (iii) If fails by maximum of 5 marks either in one subject or two subjects taken together, he /she may be given grade 'P', (iv) Obtain a Cumulative Grade Point Average (CGPA) of not lower than 5 (considering all courses including those in which the student has secured an F (Fail) grade. The method for calculating SGPA and CGPA is illustrated in Clause 5.2(b). If the CGPA at the end of the 2nd semester class is less than 5, the student will not be allowed to register in 3rd semester and resume it in the following year along with the next batch of students. In the repeat year, he must attend classes and be treated at par with fresh students. The B.Tech, programme must be completed within 7 years of the original admission.

3.6 While registering for 3rd, 5th or 7th semester, a student may register for backlog papers of 1st, 3rd or 5th semester respectively and while registering for 4th, 6th, or 8th semester, he/she may register for backlog papers of 2nd, 4th or 6th semester respectively. A student need not attend classes in papers registered as "backlog papers". He has to sit for end-semester examinations only and the grade will be awarded based on the scores of the latest examinations and previous mid semester Examination. The registration for backlog papers must be done at the time of semester registration. In all such cases of "backlog paper", the grade awarded will be one step lower than what the student actually obtained, provided CGPA should not be less than 5 except for the grade 'P' which remains unchanged.

If a student has completed 8 semesters of study but has a few F grades in 7th semester still left, then he/she must clear backlog papers of 7th semester. The entire programme must be completed within 7 years.

3.7 For registration in 5th and 7th, a student must obtain CGPA not less than 5 in 4th & 6th semester respectively.

3.8 If a student scores CGPA below 5 in two consecutive 1st Year Exams, he/she has to leave the Institute.

3.9 The classes of all semesters will start from the day following the registration, or any other date decided by the Principals.

3.10 A student who has been debarred from appearing at an examination either (i) as a measure of disciplinary action or (ii) for adopting malpractice at an examination, may register for the subject(s) as backlog papers in the following semester. Those who have been awarded grade X (“debarred”) because of poor attendance or for any other reason need to register for the course and attend classes as per rules.(expect for 1st semester as per as 5.3)

4. Grade at the end of First Year (2nd Semester)

CGPA \geq 5 to register in 3rd semester with full suite of courses.

4.1 For appearing at any semester examination a student must attain minimum 75% of lecture delivered in each theory and in each sessional/ practical paper. Condonation of 10% of attendance on medical ground may be allowed by college authority.

5. Examinations

5.1 The examination office of the A.K.University will centrally conduct the End-semester Examinations of 70 marks in respect of theory subjects and one mid semester examinations of 30 marks will be conducted by respective institute.

There will be no provision of home centre as per prerequisite of Bihar Examinations Act. All necessary Charts, Tables, Codes and Data book, drawing board will be provided by AKU/ respective Institute in designing and drawing examination.

GRADING OF PERFORMANCE IN EXAMINATIONS

As a measure of student's performance, a 7-scale grading system using the following letter grades and corresponding grade points per credit shall be followed:

Performance	Letter grade	Grade point per credit
Excellent	A+	10
Very good	A	9
Good	B	8
Fair	C	7
Average	D	6
Pass	P	5
Fail	F	0

The method of converting the percentage of marks to letter grades will be as given in clause 10. To earn academic credit in a subject, a student should get a grading of "P" or above. Where a prerequisite is specified for a course, a grading of P, or above shall be deemed as satisfying the prerequisite requirement.

Records of Academic Progress

5.2. (a) Semester Grade point Average(SGPA) shall be calculated as under:

$$\text{SGPA} = \frac{\sum_{\text{Semester}} (\text{Course credits} \times \text{Grade point}) \text{ for all courses}}{\sum_{\text{Semester}} (\text{Course credits})}$$

5.2 (b) The academic progress of the students in each semester shall be maintained in a grade card or transcript, wherein the grades awarded to students as well as the points secured by the students in the examinations, shall be entered. The transcript given to the students at the end of their complete undergraduate program shall indicate the cumulative grade point average (CGPA) which shall be calculated as follows:

$$\text{CGPA} = \frac{\sum_{\text{All Sem}} (\text{Course credits} \times \text{Grade point}) \text{ for all points}}{\sum_{\text{All Sem}} (\text{Course credits})}$$

The CGPA shall be rounded off to 2nd place of decimal. While calculating CGPA, the 'F' shall be replaced by the better grade earned in these course in the subsequent Semester/ Special Examination.

5.2 (c) When a student gets a grade 'I' for any subject(s) during the semester, the SGPA of that semester and the CGPA at the end of that semester will be tentatively calculated ignoring this (these) subject(s). After the 'I' grade(s) has (have) been converted to appropriate grades, the SGPA and CGPA for that semester will finally be recalculated after taking into account this (these) grade(s)

5.3 Credit Adjustment for Lateral Entry Programme

Students entering 3rd semester courses through Lateral Entry Scheme from Diploma institutions will be awarded proportionate and equivalent credits corresponding to the wightage of Theory and Sessional marks in their final diploma result and that in relation to the total 53 credit requirement in the first and second semesters under the regular semester scheme. The secured marks by the individual student will fetch proportionate credit corresponding to Theory and Sessional paper marks.

5.3.1 Credit Adjustment Table

Sl.	Percentage Marks obtained in final Diploma Exam	Grade point	
		Calculation	C.G.P.A
1.	Passed the diploma exam and secured less than 55% marks	----	6.00
2.	Between 55.00%, X1, X2, < 60.00 %	$Y/10 + 0.75$	6.25, Y1+0.75, Y2+0.75, < 6.75
3.	Between 60.00%, X1, X2, < 65.00 %	$Y/10 + 0.75$	6.75, Y1+0.75, Y2+0.75, < 7.25
4.	Between 65.00%, X1, X2, < 75.00 %	$Y/10 + 0.75$	7.25, Y1+0.75, Y2+0.75, < 8.25
5.	Between 75.00%, X1, X2, < 92.50 %	$Y/10 + 0.75$	8.25, Y1+0.75, Y2+0.75, < 10.00
6.	Between 92.50%, X1, X2, < = 100.00%	----	10.00

X1, X2. Variant percentage = Y
 Y1, Y2 Variant C.G.P.A = **C.G.P.A**

6. Graduation Requirement

6.1 In order to qualify for a B.Tech. or B.Pharma degree covered under these Regulations, a student must:

(a) Complete all the credit requirements for the degree, as laid down in the prescribed curriculum of the discipline, with a minimum grade 'P' scored in every subject.

(b) Obtain a CGPA of 5 or higher at the end of the semester in which he/she completes all the requirements for the degree.

7. Award of Degree

7.1 Mode of Examination:

The theory and the sessional/practical/project components have been bifurcated as follows:

Theory component

- (1) MSE(Internal Evaluation) - 30 marks
 - (a) Attendance - 5 marks
 - (b) Assignment/Class Test- 5 marks
 - (c) Mid semester examination- 20 marks (2/3 Hours duration)
- (2) End semester examination- 70 marks (3/4 Hours duration)

Sessional/ Practical/Project Component:

- (1) CPA(Internal Evaluation)- 20 marks
 - (a) Attendance - 5 marks
 - (b) Class performance - 5 marks
 - (c) Internal viva - 10 marks

For CPA of 40 marks, every component will be multiplied by 2

- (2) End semester examination- 30 or 60 marks (3/4 Hours duration)

8. Method of Converting percentage marks to grades.

1. The absolute grading system will be used as under.

% of marks obtained	Letter Grade
90% and above	A+
80% to less than 90%	A
70% to less than 80%	B
60% to less than 70%	C
50% to less than 60%	D
35% to less than 50%	P
< 35% for theory and < 40% for Sessional / Practical	F

In addition, there shall be two transitional grading symbols which can be used by the examiners to indicate the special position of a student in a subject:

I - for 'Incomplete assessment'

X - for 'Debarred'

2. For the purpose of awarding class or otherwise, the CGPA shall be converted to percentage marks as follows
“Actual percentage of marks should be given on grade card in final result”.

APPENDIX - 1

RULES REGARDING CONDUCT AND DISCIPLINE

Following rules shall be in force to govern the conduct and discipline of all students:

1. Students shall show due respect to the teachers of the Institute, the Wardens and Hostel Superintendent of the Hostels, the Sports Officers and the Officers of the National Cadet Corps; proper courtesy should also be extended to the employees of the Institute and of the Hostels . They shall also pay due attention and courtesy to visitors.
2. Students are required to develop a friendly relationship with fellow students. In particular, they are expected to show kindness and consideration to the new students admitted to the Institute every year. Law bans ragging in any form to anybody. Any act of physical or mental pressurization of junior students, individually or in group, will be considered as an act of ragging. Ragging also includes forcing junior students to meet seniors outside institute premises, or in places where a student has no valid reason to be present, asking irrelevant questions or using abusive language. Ragging will be considered as gross indiscipline and will be severely dealt with, which may include expulsion from the institute. Any incident of ragging inside or outside the campus must be reported to a Hostel Superintendent, the chief warden or a faculty member designated to look after ragging issues by any student, senior or fresher, who has witnessed an incident. Failure to report a ragging incident will be considered a serious offence, even if one is not personally involved in it. If a junior student yields to any form of ragging by senior students and does not inform the Institute or Hostel Superintendents, or willfully withholds the information in an enquiry of ragging incident, the matter will be treated as indiscipline on the part of the junior student and invite punishment comparable to those against ragging itself. Willful withholding of complaint by a junior student does not automatically exempt a senior from punishment.

3. The following acts of omission and/or commission and comparable offences shall constitute gross violation of the code of conduct and are liable to invoke disciplinary measures:

- *Furnishing false statement of any kind in the form of application for admission or for award of scholarship or prizes etc.*
- *Furnishing false statement to the Disciplinary Committee, or willfully withholding information relevant to an enquiry.*
- *Organizing or participating in any activity that has potential for driving fellow students along lines of religion, caste, home state, and batch of admission or any other unhealthy criterion.*
- *Physical or mental harassment of fresher's through physical contact or oral abuse.*
- *Getting involved in a brawl or fight with persons outside the Institute, either alone or in a group, irrespective of whom initiated the conflict.*
- *Willfully damaging or stealthily removing any property belongings of the Institute, Hostels or fellow students.*
- *Adoption of unfair means in the examinations.*
- *Possession, consumption or distribution of alcoholic drinks or any kind of hallucinogenic drugs.*
- *Organizing or participating in any group activity except purely academic and scientific programmes in company with others in or outside the campus without prior permission of the Principal of the Institute.*
- *Mutilation or unauthorized possession of Library books.*
- *Not cooperating with faculty, officers investigating a potential disciplinary issue.*
- *Resorting to noisy and unseemly behaviour, disturbing studies of fellow students.*
- *Disturbing in drunken state or otherwise an incident an academic or student function or any other public event.*
- *Not obeying traffic rules on campus, not following safety practices or causing potential danger to oneself or other persons in any way.*
- *Displaying lack of courtesy and decorum, resorting to indecent behaviour any where within or outside the campus.*
- *Not intimating his/her absence to the Hostel Superintendent before leaving campus.*
- *Getting involved in an activity that violates state or national laws.*

4. Commensurate with the gravity of the offence, the punishment for indiscipline may be
 - Reprimand, impose fine or take any other suitable measure.
 - Debarment from medals and prizes,
 - For economic offences (either misappropriation of money or damage to Institute property), the cost to the Institute will be recovered along with a penalty which may be up to ten times of the cost recovered.
 - Partial (one month or one semester) or complete debarment from campus placement,
 - Reduction in grade in one or more courses,
 - Expulsion from the Hostel,
 - Rustication for a specified period, or
 - Outright expulsion from the Institute.
5. All major acts of indiscipline, which may have serious repercussion on the students in general and/or which may warrant a uniform and more formalized nature of investigation, shall be handled by the Institute Disciplinary Committee appointed by Principal of the Colleges. The Disciplinary Committee shall investigate complaints; examine available evidence and award punishment. Recommendation of the committee, which will include the suggested punishment in cases of guilt proven, will be forwarded to the Chairman of the Governing Body of the Colleges for necessary action.
6. Proof of guilt need not necessarily be at the same level as necessary in a court of law. The committee, in order to protect the academic rights of a greater body of students, may award disciplinary measures if it is reasonably satisfied that such measures are in the greater interest of the students.
7. The Principal of the Colleges, at his discretion may take additional measures keeping in mind long term issues and impact on other aspects of Institute management. The Principal make minor changes in the nature of punishment awarded or reduce the level and/or quantum of punishment if he feels appropriate.

8. Acts which may be classed as 'crimes' rather than acts of indiscipline will be reported to the state authorities; they include such acts as causing serious injury to fellow students or others, causing major damage to Institute property, being involved in activities prejudicial to national security or to that maintaining communal harmony etc.
9. Cases of adoption of unfair means in an examination shall be dealt with by the Examination Disciplinary Committee of A. K University Patna. If adoption of unfair means is proved, the punishment may be, depending on the quantum of the offence and prior record, reduction of grade, de-registration of a course, expulsion for one or more semesters or outright expulsion from the Institute.

APPENDIX - 2

PROCEDURE FOR ADMINISTRATION OF SHORT TERM INDUSTRIAL OR RESEARCH EXPERIENCE (SIRE PROGRAMME)

1. The SIRE programme shall be of at least 8 weeks duration after 6th semester of B.Tech. The experience should preferably be earned in an industry of repute, major R & D laboratory, an IIT, NIT or IISc. The key word is "repute".
2. While summer work after 6th semester of B.Tech is compulsory, a student may, at his discretion, acquire experience at the end of the 4th semester of the B.Tech in addition to the programme after the 6th semester.
3. The Training and Placement department shall arrange places of work for all students of 6th semester of B.Tech. It may also assist students of 4th semester of B.Tech to find work opportunities at mutual convenience.
4. The work may be carried out either in India or abroad. The Institute shall not bear the cost of travel or accommodation in any place. Some organizations offer work experience to engineering students against a fee. The

Institute will examine such programmes for their content and spirit and approve deserving cases. The student shall bear the expenses.

5. Students are encouraged to receive financial support from the organizations where they are placed or from other sources. Such financial offers will not count as alternative scholarships.
6. Students will not be permitted to enroll in regular, periodic or a periodic courses (e.g. CAD/CAM course, Oracle course) offered by companies, even if the subject is of interest to the academic programme. If a subject is of relevance to the Institute's academic programme, it should be included in the curriculum instead of requiring the students to study it outside the Institute by paying additional fees.
7. Considering difficulties of accommodation and travel, the Institute shall work out places of work taking into account the convenience of students. For this to happen, the T & P Centre shall put up a notice seeking suggestions from students for possible work sites.
8. Some time around February-March of the year, the T & P department shall finalise the list of work sites for the students and announce it on the notice boards. The students will then make railway reservation and take other steps necessary. Students will have no freedom to choose their own places of work beyond giving suggestions to the T & P Centre. In case a student faces difficulty with the assigned place, he should bring it to the attention of the Professor T & P so that he can be given a fresh allotment. Any change of place of work after starting of the summer vacation must be approved by the Professor T & P on the merit of the case. Any work at a place not approved in advance will not count towards credit requirement.
9. The T & P Centre shall have the responsibility to inspect the places of work to ensure that the students are sincere in their assigned responsibility. If it is found that a student is not attending his work place on full time basis, the student shall get 'F' grade and the SIRE programme is to be repeated at the end of the 8th semester with consequent delay in completion of the students' academic programme.

10. The SIRE report will be evaluated by the department at the beginning of the 7th semester, preferably within one month of the starting of the semester. The department will assign one or two faculty members to coordinate presentation by the students and evaluation of the reports. The grades must be sent to the examination office before the mid semester examination of the autumn semester.
11. The T & P Centre shall be the nodal agency for arranging places of industrial experience. But departments also need to play a strong role. Many faculty members are well known in industry and the industry honours the requests of faculty members and Heads of Departments.
12. There will be a Training & Placement Advisory Committee headed by the Professor of Training & placement. Every department shall nominate one faculty member having strong connection with industry and a strong perception of all aspects of the department's academic programmes.
13. SIRE will also include credit for the industrial tours and visits arranged by the Institute during the first seven semesters of a student's career. The relative assignment of marks between the two components shall be: 75% for summer work and 25% for the industrial tours.

APPENDIX - 3

GUIDELINES FOR USE OF PROJECT RECORD BOOK

1. The Project Record Book constitutes the bona fide record of project work carried out by undergraduate, postgraduate and research students of AKU Patna.
2. The book contains day to day record of all conceptual, analytical, laboratory and computational activities carried out by a student as a part of his project.
3. It is a permanent record of academic activity and contains intellectual property created by the student and his supervisor.

4. The book should be treated with respect and maintained with care. Pages must not be torn or used for rough work.
5. The student should record all his thoughts, observations, flow charts, computational steps etc., directly on this notebook. Use of second rough book and final copying to this record book is discouraged.
6. All information recorded here must start with a date on the left margin. The work of the day must be organized into sections such as objective, experimental or computational methods, observations, program flow charts, pseudo-codes, conclusion, discussion etc., as relevant to the problem at hand. Short computer prints, photographs, charts and graphs may be pasted neatly wherever necessary.
7. The supervisor should examine the progress of the student and record his observations, comments and suggestions in a regular manner, typically once every week.
8. The student must produce this record book before all Examination Boards for evaluation and grading of his day to day performance, and for award of medals and prizes. The first evaluation of the project will be made basing on the record book only.
9. On completion of the project, the student must surrender this book to his supervisor for archiving. If the same problem is continued by students of the following batch, the supervisor may choose to give it to those students for the sake of continuity. Projects with supervisor intellectual material may be sent to Departmental Library for permanent archival.

The students who do work worth publishing and/or patenting are advised to proceed with those activities. The Institute will organize the patenting process.