Guidelines for Internship/Research Internship for Under Graduate Students

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1.0 INTRODUCTION

The India Skill Report (ISR), 2022 highlights that youth employability has improved to 46.2 % in 2021 from 45.97% till 2020. Interestingly, 51.44% employability of females was observed compared to 45.97% of males for 2021-22. In the year 2023, undergraduates in domain of the commerce got the highest employability rating at about 60.62%. The reports further mentioned that, 88.6% of graduates are looking for internship opportunities. In 2022, 88.42% of respondents in the report have given preference to an internship for gaining experience. It was also recorded that the year 2022 was also the year to mark the highest demand for internships since 2016. It is also observed that in India employers like to hire employees having at least a year of working experience (ISR, 2022).

In India, there are many platforms (Internshala, Lets Intern, Killer Launch, Hello Intern) that offer internships from many renowned organizations. In addition to this, many other portals are available which provide trainings and a range of courses across Industries. Experts also enroll in internships to get life-changing experiences. Internshala launched an initiative called the "Grand Summer Internship Fair", which offers more than 23000 internship opportunities to people from all educational backgrounds. The internship model proactively works as the primary value for providing the familiarity of genuine work in a representative situation to the students by the mentor under closed supervision. The pupil gain experience in a tested pedagogical norm and is expected to make critical thinking with a range of values and observations.

The National Education Policy 2020-(NEP-2020) views that the purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values. It aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our Constitution. The NEP-2020 envisions promoting quality research in higher education and to ensure quality education by higher education institutions (HEIs), research and innovation are two inherently important aspects. The societal needs of our country can only be addressed by having a strong knowledge, skills, value and research-oriented vibrant higher education ecosystem for sustainable development.

In accordance with the NEP-2020, the UGC framed a new student-centric "Curriculum and Credit Framework for Undergraduate Programmes" (CCFUP) incorporating a flexible choice-based credit system, multiple entry and exit options, and a multidisciplinary approach. In an internship course students require to participate in a work experience or professional activity, or cooperative education activity with an entity external to the education institution, under the supervision of an expert from the given external entity. A prime aspect of the internship/research internship is induction into actual work situations. Internships includes working with government or private organizations, higher education institutions, universities, research and development labs/research organisations/non-government organisations, enterprises, centres involved in research, innovativeness and entrepreneurship, business organizations,

local industry, artists, craftspeople, and similar other entities for providing opportunities to students for active engagement in on-site experiential learning.

2.0 OBJECTIVES

An internship is gaining first-hand experience by an individual besides comprehending the way of working in an organisation, leading to improve the skill aptitude for a specific job or job role and building research capabilities with learning opportunities. Internships should be such organized that benefits the research intern as well as the internship providing organization. Following are the intended objectives of engaging undergraduate students in internship for employability and research internship programmes:

1. **Integration of workshop with workplace:** To see the internship in a broader, integrated and holistic manner where the delivery of the classroom is aligned with outcomes of the workplace. The objectives of the internship need to be designed with the intention of integrating workshop / classroom / lab/research lab learnings with the workplace (organisation / enterprise / start-ups / corporate / farmlands / artisans / gig workers / Non-government organisations (NGOs)/research & development organisations, higher education institutions (HEIs), etc).
2. **Understanding of the world of work:** To provide undergraduate students with an opportunity to improve their understanding of the experiences, challenges, and opportunities of the real world of work, as well as to set their expectations and behaviour in accordance with the demands, culture, and values of current and emerging jobs.
3. **Phygital and hybrid model learning:** To broaden learning opportunities by combining physical and digital modes of learning while working in industry, corporate, research & development organisations, workplace, within or outside HEIs, blended with a mentor or research expert and as per the need and convenience.
4. **Developing research aptitude:** To create and facilitate conditions that allow students in their quest for knowledge, its discovery, learn, understand and sharpen research acumen, familiarising with analytical tools and techniques with appropriate usage, research methodologies, data analysis, integrity and ethical behaviour, manuscripts preparations, identification of appropriate journals, patent and intellectual property rights, and their application in solving research/complex/real-life problems.
5. **Exposure in emerging technologies:** To provide exposure to emerging technologies/ automation and how it can support, facilitate, improve and reinforce work processes/ culture/ job roles/art and craft, including the traditional areas of art-craft/ heritage skills, agriculture, etc.
6. **Enhance entrepreneurial capabilities:** Understand how organisations / enterprises are formed for sustainable progress so that start-ups and entrepreneurial capabilities are strengthened among students and they are encouraged to be job creators.
7. **Development of decision-making and teamwork skills:** To facilitate the development of problem-solving and decision-making skills, enable teamwork

& collaboration culture to promote research, academic and professional developments.

8. **Cultivate a sense of Social Imagery and Citizenship Responsibility:** To develop a sense of social imagery (issues) and philanthropic versatility among the graduating students that will facilitate towards the development of an attitude towards citizenship responsibility.
9. **Stimulate collaborative influence:** To promote HEIs collaboration, industry-academia partnership will be developed to provide collaborative internships, apprenticeships, and research opportunities to the students in the predefined areas of importance which will lead institutions, universities, organisations, academicians, and students to collaborate on how to learn with one another.
10. **Enhancing professional competency:** The internship should not only focus on employability or research capabilities; there is also a need for professional principles, ethics, values, and integrity which will enable them to gain perspective, practice, develop as competency and perform professional tasks in the way that the employment market demands.

3.0 INTERNSHIP CATEGORIES

The employability of graduates can be improved by developing practical experience and exposure with the required right kind of attitude for the workplace. The internship is one of the important apparatuses that help in improving these employability skills and can help in generating competency, capability, professional working skills, expertise, and confidence among the students for employability and developing interest/passion for research. The interns can understand the application of theory in the workplace.

The undergraduate internships would be classified into two types:

i. **Internship for enhancing the employability**
ii. **Internship for developing the research aptitude**

3.1 Enhancing Employability

Graduates face many difficulties after graduation to enrol in the workforce. Recent graduates are lacking knowledge, practical skills, and experience which are mandatory requirements demanded by employers for recruitment. Graduates face many difficulties after graduation to enrol in the workforce. Recent graduates are lacking knowledge, practical skills, and experience which are mandatory requirements demanded by employers for recruitment.

Employability refers to the certain attributes of an individual that enable him/her to perform any job opportunity in line with the set standards of performance to meet expectations for the expected job. Employability is a set of skills and attributes developed through a range of experiences at workshops and workplaces. It states that when a student can demonstrate skills on the job. Individuals need to develop such competencies which reduce the obstacles as job seekers and also increase their potential as job providers.

The internship programs should be well conceptualized and interactive for building research capabilities/aptitude/skills of our under-graduates/researchers/faculties for

1. Development of project and its execution
2. Decision-making
3. Confidence development
4. Working/coordinating in a team
5. Creative and critical thinking and problem-solving
6. Ethical values
7. Professional development
8. Understand government/local bodies world of work
9. Reference of resource persons in the field
10. Development of online/ simulation-based module for a virtual research internship
11. Understanding the nuances of building a deep-technology start-up
12. Study certain entrepreneurs,
13. Study of the enterprises, farmers, artisans, etc.

3.2 Developing Research Aptitude

Research aptitude refers to the attribute of inquiry/investigation, analysis and interpretations in a scientific and objective method that facilitates to uncover facts and present an individual viewpoint in an organised manner.

Research internship aims at providing hands-on training to work on research tools, techniques, methodologies, equipment, policy framework and various other aspects in pursuing quality research.

Apart from gaining relevant research experience, the interns would learn the following, through research professionals/mentors:

- Ideation and conceptualization of a research question/problem
- Learning about new tools and handling of equipment
- Experimentation and collection of data
- Simulations and development of models
- Preparation and presentation of reports

Research Internship experience can be gained by working with faculty/scientists/mentors in HEIs, research institutions, universities, Industrial research labs, nationally and internationally reputed organizations, farmers, and entrepreneurs, using local experts through recognition of prior learning models and individual persons distinguished in specific fields. The integration of research, innovation and technology development is the foundation of Atma-Nirbhar Bharat (Self-reliant India). Institutionalization of internships at undergraduate levels is expected to play a pivotal role in catalysing the inter-disciplinary/multi-disciplinary/trans-disciplinary and translational research culture embedded in NEP-2020.

4.0 INTERNSHIP STRUCTURE

An internship provides learning experiences related to a student's interest or area of study. It also gives an opportunity to acquiring new skills. The HEIs are required to play

an important role in arranging internships for their students by creating a structured robust mechanism for internship programmes under their Research and Development (R&D) Cell. The R&D cell may appoint the coordinator or create a well-defined mechanism or structure at the HEI level for smooth coordination and functioning of internships across diverse disciplines.

1. Each HEI should have a Nodal Officer who is responsible for developing need and demand-led verticals as well as expectations from each vertical in undergraduate programmes. The internship must be well-defined, with clear outcomes. It is critical to explore, reach out to, and sign a Memorandum of Understanding (MOU) with local businesses, research organisations, HEIs, etc. as this will aid in training, research, employment, and start-ups.
2. To define verticals, HEIs must undertake a survey in the local market to understand the needs of companies and the expectations of students. These verticals can be on the basis of industry clusters operational in the country, from emerging technologies and from the international world of work also.

Industrial regions/clusters may include those places where industries have concentrated as a result of favourable geo-economic circumstances. These are places where a sizable portion of the populace works in the manufacturing area, which operates on a sizable scale. There are indicative clusters identified at central, state, micro and local government/administration levels and HEIs at their own level can identify and also go beyond these clusters for internships.

Further, there are certain verticals that HEIs may incorporate as options while choosing a sector by a student while making registration and undergoing an internship/research internship. The list is indicative only.

1. Trade and Agriculture Area
2. Economy & Banking Financial Services and Insurance Area
3. Logistics, Automotive & Capital Goods Area
4. Fast Moving Consumer Goods & Retail Area
5. Information Technology/Information Technology enabled Services & Electronics Area
6. Handcraft, Art, Design & Music Area
7. Healthcare & Life Science Area
8. Sports, Wellness and Physical Education Area
9. Tourism & Hospitality Area
10. Digitisation & Emerging Technologies (Internet of Things/Artificial Intelligence/Machine Learning/Deep Learning/Augmented Reality/Virtual Reality, etc.) Area
11. Humanitarian, Public Policy and Legal Service Area
12. Communication Area
13. Education Area
14. Sustainable development Area
15. Environment Area
16. Commerce, Medium and Small-Scale Industries Area

For Instance, Internships in agriculture, and related domains like farm internships, agriculture research internships, agri-business internships can be considered as an opportunity by undergraduate students enrolled in HEIs. The agriculture sector needs to be considered by HEIs for the internship in rural regions. The HEIs/Universities at their level can explore National Qualification Register and check the possible job roles across sectors for exploring the internship areas **(https://nqr.gov.in/).** However, the HEIs/Universities are open to explore areas beyond that and it can be used as an indicative only.

3. Internship would involve a student from a HEI and he/she would be attached to an internship supervisor (IS), and mentor preferably from the same HEI for a specified duration and conduct a time-bound internship project. The HEI (parent Institute) and the Internship Providing Organization (IPO) would play important roles in facilitating the smooth conduct of the internship.
4. A provision of group internship may also be considered for handling the chunk of students in a particular domain by HEIs. The group can be identified for a particular theme assigned to a particular industry or HEI supervised by an internship supervisor and mentor. Students can also come together and submit their proposal to the R&D coordinator and then after the examination of the proposal the cell can approve/reject it. If the proposal is accepted by the cell, then the allocation of a supervisor as well as a mentor for the same could be made as per norms (Student centric rather than Institution Centric). The HEIs/Universities can also explore the possibilities of joint project works for their students based on mutual understanding and agreements.
5. The institution, based on local assessment, programs offered by the institute/university can identify projects linked to the local industry needs and create a pool available on the portal. The student chooses a project, and he must get a supervisor and mentor for it. The mechanism of local industry collaboration should be one of the focal points of HEIs for providing internship opportunities to students.
6. The internship can be linked to the outcomes of value-added/skill-development/ability enhancement courses. HEIs may have both backward and forward integrations for internships. For backward integration, the HEIs can make use of ability-enhancement courses, value-added courses, and skill-enhancement courses. These courses should serve as a prerequisite for internships and should be handled as such.
7. For forward integration the HEIs need to develop a list of projects along with a list of mentors, the same can be uploaded on the portal developed by HEIs. The students can pick projects and get paired with chosen mentors along with an option of co-mentor from the same or any other reputed institution or organisations.
8. HEIs need to make their digital portals where they can register experts, agencies, industries, organisations, mentors, faculty members which are open and visible to students. HEIs must ensure that these portals have the scope of application programming interface (API) integration, so that when a central portal is available, integration can be made.
9. Students can choose industry mentor from HEIs/ research organizations/industrial R&D labs/Universities/other national repute

institutions / organizations / industries / emergency professional / NGOs / local government officials/ outside India experts working at the international level/social networking sites (e.g., **LinkedIn**). The same portal can be developed at HEI/University level. A centrally managed Internship Portal would help in arranging the internship by the HEIs for the students. The portal will provide information regarding various internship opportunities like **Internshala**, etc

10. Certain experienced people superannuated as research scientists, academics, industry professionals, farmers, entrepreneurs, local artisans and other experts, etc. can get registered on a portal as mentors from various disciplines. HEIs may network with local administration and identify areas where students can work on assignments or projects that will give them exposure to social issues in the form of projects.
11. Projects can also be scoped and aligned to the study of the effectiveness of various government and non-government schemes as well. The live case study assignment can also be imparted as the project to the individuals which led learners to apply that learning in the real-life situation depending on the kind of course (e.g. law, management, social works).
12. The students involved in the internship may continue their internship subject to the condition that his/her academic credits do not get affected in terms of attendance and other assignments. If the need arises, students may also have an opportunity to make use of summer & winter breaks for extending their learning from internships.
13. HEIs can also look upon cluster models where institutions (2-3) can club or make a memorandum of understanding (MoU) for internships, the information of same need to be mentioned on the portal of HEIs and student may be willing to opt any and choose the mentor physically or digitally or any mentor outside also at national or international level.
14. There must be a mechanism for the orientation of teachers/ training of trainers'/faculty development programs and it should serve as a prerequisite for the HEIs offering the internships in the programme. In the case of the 4-year program, the policy needs to be framed for students who have an interest in research right from the beginning at the undergraduate level.

5.0 ACADEMIC CREDENTIALS & MONITORING OF INTERNSHIP

A. Internship

A minimum of 2-4 credits, out of the required minimum 120/160 credits, of a 3-year UG degree/4-year UG degree (Honours)/4-year UG degree (Honours with Research) can be assigned for Internship as per the National Higher Education Qualifications Framework (NHEQF) and Curriculum and Credit Framework for Undergraduate Programme (CCFUP). An internship of 60 to 120 hours duration after the 4^{th} semester will be mandatory for the students enrolled in UG degree programmes.

For an internship, one credit of Internship means two-hour engagement per week. Accordingly, in a semester of 15 weeks' duration, one credit in this course is equivalent to 30 hours of engagement in a semester.

B. Research Project/Dissertations/Thesis/Project work

For the 4-year UG degree programme (Honours with Research), engagement of students in the dissertations/research project during the entire 8th semester of 12 credits will be considered as a mandatory component for the award of the degree. The students need to essentially submit the research project/dissertations/thesis/project work to the allotted mentor. The submission of the report with the conduction of viva will also be a component for the successful evaluation of the dissertation/research project/thesis/Project work.

The dissertation/research project/thesis work should involve 360 hours' duration during the 8th semester and it will be mandatory for the students enrolled in UG degree programmes (Honours with Research).

5.1 Competencies to be developed during Research Internships

3-year UG degree, 4-year UG degree (Honours) and 4-year degree (Honours with Research) programme will be operating strictly adhering to NEP-2020, NHEQF and CCFUP provisions. Based on the higher education qualification level descriptors for Level-5.5 and Level-6 some of the competencies with research orientation should be attained by the students by studying the courses under the Research Ability Enhancement Courses (RAEC) and by undertaking the research internship project.

- The students should be well-versed with the techniques and methods of research that would support knowledge creation.
- The students should have an understanding of complex problem statements and the ability to develop solutions for real-life problems.
- The students will possess a good comprehension ability to interpret the oral and written communications in research papers, and present own interpretations.
- The students will be able to communicate technical information, research findings to the peers.
- The students will be made aware of the research ethics, professional accountability, conduct and will be able to practice the research ethics and appropriate skills in in his/her own research work.
- The student will be able to enhance academic productivity by developing writing and reading skills and can make contributions towards social and economic issues from their research in future.
- The research intern can possess an attitude and skill of adaptability and flexibility for new challenges at organisational and individual level with a mind-set of teamwork and collaborations.

5.2 Duration and Slots for Internship in Curriculum

Each undergraduate student may complete an internship of 2-4 credits during after the 4th semester of the UG degree programme focussing on Hands-on Training/Short Research Project. However, the student who has to go for a 4-year UG degree (Honours

with Research) programme will be required to choose courses as given Table 1 during the 8th semester.

Table 1: Activities, Suggested Duration along with a corresponding number of credits of Internship Programme:

S. No.	Courses	Suggested Schedule	Duration	Suggested Activities	Credits
1	• 3-year UG degree • 4-year UG degree (Honours) • 4-year UG degree (Honours with Research)	After (4th) Semester	60 -120 hours	Hands-on Training/Short Research Project Seminar attendance Read assigned journals to prepare for seminars Study certain entrepreneurs Social projects Study of the enterprises/ farmers	02-04
2	4-year UG Degree (Honours with Research)	8th Semester	One Semester	(i) HEI may adopt Research Methodology, Research Tools and Techniques, Research Ability Enhancement and Policy Framework Courses (ii)Dissertation/Thesis/Project Work/Research project	08 12

Note: In a 4-year UG degree (Honours) students not undertaking research may do 3 courses for 12 credits in lieu of a research project/dissertation as specified in CCFUP Document.

6.0 ROLE OF INTERNSHIP PROVIDING ORGANISATION, NODAL OFFICER, INTERNSHIP SUPERVISOR AND MENTOR

6.1 Role of Internship Providing Organisation

Internship Providing Organisation (IPO) is any organisation, HEI, philanthropy, farmer, government organisation, R&D institutions, research labs, artisans, enterprises, institution/person of eminence, cooperatives, corporates providing an opportunity to the student for Internship during the programme

- Internship providing organisation will connect with a nodal officer to look into the matter of facilitating the interns on arrival with registration, identity cards/ library cards/ internet subscription/ any other specific requirements, accommodation, etc.
- The mentor from internship providing organisation needs to provide time-to-time guidance to the candidate to have exposure to the research environment and employability market.

6.2 Role of Nodal Officer

Nodal Officer is an individual, who will be nominated as a member for the organisation and execution of internship opportunities in the institution. The person may be from the Research & Development (R&D) cell of the HEI. He/she will ensure the organization and registration of students, mentors, organisations, internship supervisors on the HEI portal developed for internship.

- Internship Programme will be fully organised, executed and monitored by the R&D cell of HEI through a Nodal Officer to be appointed by the Vice Chancellor/Director/Principal/Head of the Department of HEI.
- The nodal officer may reach out to HEIs, research organisations, research labs, corporates, industry, etc. and moreover to local administrative offices like Deputy Commissioners and heads of certain government offices like labour, municipal, hospital, tourism, public relations, finance, agriculture, social welfare, etc. to seek the opportunity of an internship for the institution. For instance, the students can participate with local government in processes of census, surveys and elections and other schemes with proper mentoring mechanisms.
- The nodal officer may take care of the interns during their stay and address their problems, if any.
- The nodal officer must connect with the organisation and make MOUs so as to facilitate the students for an internship during the course.
- The nodal officer must ensure the registration of students, internship supervisors, mentors and internship providing organisation in the portal

6.3 Role of Internship Supervisor

An internship supervisor is any individual who will be nominated by the institution for monitoring, supervising, and evaluation of the student during the internship duration.

- Internship Supervisor will be nominated at the start of the academic year for each batch.
- Internship Supervisor from the host institute should monitor the regularity of the intern at his/her workplace. Students should preferably inform the Internship Supervisor at least one day prior to availing leave during the internship except for emergency.
- At the end of the internship, the Internship Supervisor will ensure issuing of completion certificates to the intern.
- Internship offered by the organisation should be followed by one project report and the assessment on the evaluation can be judged based on the innovativeness of that particular project, presentation and attendance by HEIs.

6.4 Role of Mentor

A mentor is an empanelled individual professional who is identified by the HEI or by students himself/herself through their network. The mentor should be identified and his/her concurrence should be conveyed to the internship supervisor.

He/she will be providing professional/research guidance to the student during the internship. The mentors will also facilitate networking with other subject matter experts/professionals, which will enhance the internship experience and learning of the intern.

They shall be making the timely evaluation of a student and provide him completion certification/report for submission in HEI.

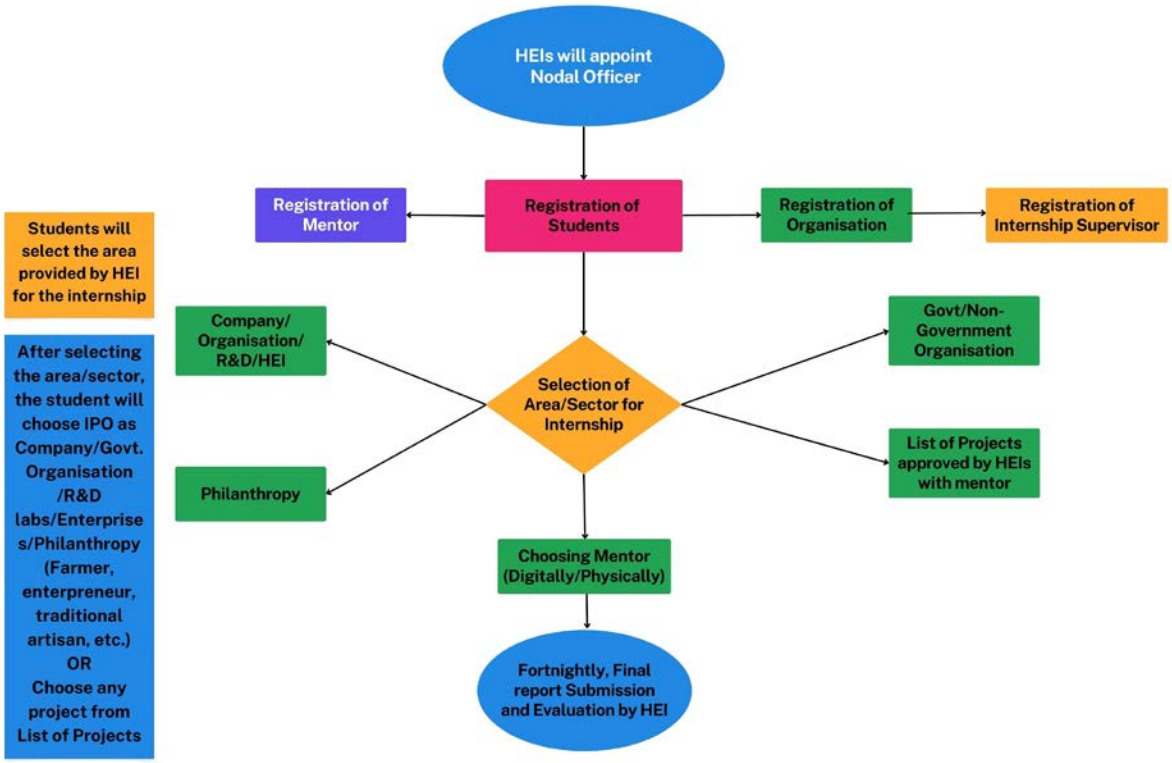
- The mentor needs to provide guidance to the students digitally or physically throughout the internship duration.
- The mentor needs to check and validate the performance of students fortnightly and after the completion of the internship, issue the certificate/report.
- The mentor must ensure the learning of competencies with research orientation among the students during the internship duration.
- HEIs may integrate the job assigned to faculty with workload assessment.

7.0 INTERNSHIP MECHANISM

HEIs should develop a roadmap for the smooth functioning of (i) the internship programme under the Research and Development Cell at the HEIs, (ii) the office of the nodal officer, (iii) internship portals and about roles and responsibilities of interns, supervisors and mentors, iv) a list of projects and v) HEI and internship providing organisation may decide about Internship on mutually agreed terms and conditions. Internship outcomes should have been incorporated in developing a perspective among the candidates or students towards a profession and their ability to deconstruct a job role and to become job-ready as soon as they enter into a job or a profession.

a) Students will apply for research internships on their own or through the mentor of their parent HEI by registering at the internship portal. The HEI should ensure that such a student has an appropriate orientation for research through research ability enhancement courses as a part of the curriculum.
b) Interns will be selected by host organizations based on their selection criteria. The host organization will arrange to inform the potential intern through the portal itself or through the mail and will ask for confirmation or for acceptance.
c) If a student fails to get an internship in physical mode, then the host institute should have a provision for digital or group internship.
d) On receipt of an offer of internship, the student will arrange to consult the internship supervisor, obtain due permission from the parent institution and join the concerned host organization for an internship as per the suggested schedule.
e) The student may undergo an internship in the supervisor's lab/ working space at the host organization. During the period of internship, the parent HEI through the internship supervisor and mentor, will arrange to keep track of the activities and performance of students as interns at the host organization, based on periodic reports submitted by students.
f) On completion of Internship, intern will prepare internship report and get it endorsed by mentor.

Figure 1: Operational Structure of Internship



8.0 EVALUATION

Internship

1. The parent HEI will examine/evaluate the student's performance following its evaluation method.
2. The evaluation of the internship will be carried out at the following stages:
    a. The interns will be evaluated by research internship supervisor based on their efforts and research output.
        b. The interns will be evaluated through seminar presentation or viva-voce at the HEI, (marks will be given by a group of experts from HEI including the supervisor).
3. At HEI, the intern will be evaluated through a seminar/viva voce on his work, by a duly constituted expert committee (One Internal and One external), on the following suggestive aspects.
    i. Activity logbook and evaluation report of Internship Supervisor
    ii. Format of presentation and the quality of the intern's report
    iii. Acquisition of skill sets by the intern
    iv. Originality and any innovative contribution
    v. Significance of research outcomes
    vi. Attendance

Research Internship

1. Internship offered by the organisation should be followed by one project report and the assessment on evaluation can be judged based on
   a. Innovativeness of Research
   b. Presentation and,
   c. Viva-Voce
2. The research project report shall have an undertaking from the student and a certificate from the research supervisor/mentor/advisor for originality of the work, stating that there is no plagiarism and that the work has not been submitted for the award of any other degree/diploma in the same Institution or any other Institution.
3. The viva-voce examination shall include both internal and external examiner. The HEIs need to follow their examination structure for the conduction of the examination.

9.0 MISCELLANEOUS

1. In the case of a 4-year of UG degree programme, the University/HEI may offer 4 credits towards internships over and above the prescribed credits in the 4th year as per Curriculum and Credit Framework for Undergraduate Programme.

2. HEIs/Universities may oversee and direct the affiliating HEIs for compliance towards the approved guidelines of internship.