ART of an Institution

First Edition

<mark>Date Here</mark>

Recommendation of the Committee on Advancing International Standing

Indian Institute of Technology Guwahati
Guwahati – 781039; Assam
India

Here 'A' represents administration, 'R' represents research and 'T' represents teaching

ART of an Institution

Vision and Mission

The strategic commitment of IIT Guwahati provides the road map for the journey towards excellence. These strategies include the Vision, Mission, Goal and Values that would be instrumental in placing IIT Guwahati among the top academic institutions of the world. The strategies will create new opportunities for the faculty and the students for enhancement of knowledge, performing cutting edge research and development of professional skills. The ultimate aim is to provide the students with an educational training that emphasizes innovation, social awareness, professional ethics, and nurture leadership skills. A resourceful environment to promote creativity and entrepreneurship amongst researchers is also being developed while maintaining sustainable goals and upholding the values of highest professional ethics and enrich the lives of humanity.

Vision Statement

"To be recognized globally for excellence in education, research and innovation, and nurture future leaders, to serve the society at large"

Mission Statements

- Provide education, research and advancement of knowledge
- Prepare the students for successful professional careers, leadership roles and be globally competent
- Motivate graduates to play vital roles in achieving excellence in pursuit for developmental activities and serve the society
- Meet the technological needs of the region and the country
- Support innovation, entrepreneurship and be a catalyst of development inclusive of all stake holders
- Making a difference in the lives of every person we interact with, to inspire and create ethical value-based transformation

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भारतीय प्रौद्योगिकी संस्थान गुवाहाटी
INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

Ref : DIR/IITG/15/NOTICE/2020/ 3333
Date: 4/8/2020

NOTICE

A committee is formed to prepare a report on steps to be taken by IIT Guwahati for making a mark in the international standing. The Committee has been constituted with the following composition for **Advancing International Standing of the Institute.**

1.	Prof. Arun Chattopadhyay, Chemistry	Chairman
2.	Prof. Anupam Saikia, Mathematics	Member
3.	Prof. K. Rakhesh Singh, EEE	Member
4.	Prof. R. Inkulu, CSE	Member
5.	Prof. Prasenjit Khankiar, ME	Member
6.	Prof. Bithiah Grace Jaganathan, BSBE	Member
7.	Prof. Kiran Keshavamurthy, HSS	Member
8.	Prof. Shareka Iqbal, Design	Member
9.	Prof. P. K. Iyer, Dean – PRBR	Convenor
10.	Ms. Manoshee Neog, PRBR	Secretary

(T. G. Sitharam)
Director

To:
1. Prof. Arun Chattopadhyay, Chemistry
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9. Prof. P. K. Iyer, Dean – PRBR
10. Ms. Manoshee Neog, PRBR
CC:
1. Deputy Director
2. Registrar

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Acknowledgement

We thank Prof. T. G. Sitharam, Director, IIT Guwahati for his guidance in preparing this document.

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1.0   Prologue

An academic institution is an essential representative of the soul of a society. The institution also represents the modernity of thought and action of the society with a universal appeal. Thus, the status of an institution is a direct reflection of openness to the assimilation of novel ideas from afar and creation of vitalities of all kinds and of the ability to see and work for the future in consonance with others. A harmonious and progressive relationship between the society at large and the academic institution brings prosperity for all.

An academic institution also acts as a constant source of inspiration for the humanity. The maturity of a civilization is reflected in the freedom and support the academic institution enjoys in carrying forward the advancement of civilization. The high nature of personalities and dispensation of the organization provides hope for a prosperous world. The timeless tradition of pursuit of excellence holds the key to the strength and longevity of an institution.

Beyond the scope of the physical infrastructure, an academic institution is represented by people of high ambitions, abilities, and diverse views. An academic institution is always a collaboration in progress. A collaboration between administration, researchers, and teachers with students being the best beneficiaries of excellence. Thus, the advancement of an institution is a reflection of the advancement on all fronts. Dedication at every level, with a sense of service towards others and keeping the high moral ground on decisions, holds the key to prosperity. The best of efforts in every aspect of activities can only keep excellence in perpetuation.

It is with high hope we present the document, entitled, "ART of an Institution", for the future of IIT Guwahati. Here "A" is for administration, "R" is for research, and "T" is for teaching. We are of the firm opinion that a fine collaboration between the three and an environment conducive to the growth of individual and collective talents have the potential to take IIT Guwahati forward at the highest level of international achievements. The recommendations embodied in this document may provide sufficient strength to all for working in close collaborations and take the institution forward in serving the interest of society. The future of IIT Guwahati can only be bright if all of us make our best of efforts in fulfilling the ambitions of an academic institution of higher learning. The aim is to continue to do well and do well with vigour and rigour and in natural combination with high morality and conscience.

2.2.11 In addition to the current system, international travel support and monetary benefits may be considered for presenting research outcomes in international conferences and organizing international conferences in the institute.

2.2.12 For promotions and hiring, the impact of the research outcome should be given higher importance than the mere number of publications.

2.2.13 A robust faculty hiring process that involves selecting candidates who have the best talent and training in the latest and emerging field should be implemented. The recruitment needs to be highly competitive. A search committee can be formed for recruitment of faculty at various levels.

2.2.14 Faculty recruitment process can employ multiple ranking criteria to holistically analyze the candidates and select based on their high ranking in multiple criteria. This could be subject specific. However, in general, academic achievements at various levels as per international standard may be considered as of great importance.

2.2.15 Full institutional support ought to be provided in order for the faculty members to become members and fellows of acclaimed international societies.

2.2.16 A viable, thriving environment and support system should be created to nurture and retain high quality faculty members in the institution. All attempts may be made to achieve the full potential of faculty members as researchers and teachers as should be evident in the evaluation in their respective fields.

2.2.17 Benchmarking with top universities of the world in terms of teaching methods/outcome and research rigor should pursued in order to ensure the quality of the outputs.

2.2.18 A clean, green and attractive campus conducive to intellectual growth with the most modern of facilities needs to be developed in order to foster all round growth of the institution.

3.0 Research

3.1 Philosophy

Academic research can be considered as the primary driver for the sustenance and prosperity of an institution. Of all the parameters, the reputation and international visibility of an institution are defined majorly by the type of research that is being pursued. Thus, the institution needs to help in developing a culture of original research. The contributions can be at the level of fundamental or applied research. The institution ought to put emphasis on both types of research and support them with equal vigour. The research output of the institution can be considered as a reflection of the culture of nurturing originality.

3.2 Implementation

3.2.1 All faculty may be encouraged to pursue research and publish throughout their career and publish at least one article in an appropriate forum- as deemed ideal - per year. However, the criterion can be subject specific.

3.2.2 Faculty members need to be encouraged to obtain funding for research through sponsored projects. All help must be provided for the implementation of the project.

3.2.3 A mantra such as 'Solve an original problem' and then 'Solve many an original problem' needs to be inculcated. Regular discourses and dissemination of knowledge on solving original problems by individuals and groups may help bring a great culture of research.

3.2.4 In case of hiring for any post (including higher positions popularly known as promotions), emphasis must be put on the originality of the research and impact of the outcome. This may be considered as the best key to individual and collective prosperity.

3.2.5 Faculty should be encouraged and, if necessary, assistance in terms of publication charges (in exceptional cases) should be provided to publish research outcomes in top-tiered journals to register the identity of IITG among the top research institutions.

3.2.6 Professors and researchers from internationally acclaimed universities may be invited by offering visiting professorship for spending time at IITG to conduct research and teaching. Collaborative research publications may be encouraged in order to increase the quality of the output.

3.2.7 Infrastructure, human resources, and fieldwork opportunities available at IITG can be highlighted by each department/Centre for attracting the association of international faculty of high standing. These associations should be meticulously planned and executed for achieving long-term collaborations. State-of-the-art laboratories need to be set-up in areas of great significance. Faculty expertise in significant numbers ought to be developed in areas of current and emerging importance.

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3.2.8 To improve cooperation, innovation, and international visibility, support can be provided to establish joint research labs headed by faculty members from international universities in association with IITG. This could be considered as a high priority area of the institution and for immediate implementation.

3.2.9 To improve research output and productivity, research scholars and post-graduate students may be encouraged to publish original works in international forums (journals and conferences).

3.2.10 The research activity of the faculty and students can be highlighted using various platforms. Virtual demonstration of methods, products and processes developed by the faculty members of the institute can be conducted for international audiences for greater visibility.

3.2.11 Efforts should be made to publish the conference proceedings of international seminars and conferences conducted by IITG in reputed international journals.

3.2.12 Research excellence is achieved by maintaining the highest degree of research conduct in terms of scientific integrity in data collection and publications. The research community can be sensitized to avoid publishing and citing research outputs in predatory/fake journals.

3.2.13 Honesty and integrity in the pursuit of research may be considered as a fundamental policy of the institute. The participants at all levels need to be sensitized about this.

3.2.14 In addition to publications and patenting, all efforts must be made to encourage growth of industry start-ups involving researchers at all levels. This needs special care, investment and planning. Appropriate attention may be put in this regard.

3.2.15 Department and Centres need to make yearly plan on resources needed for research (such as funding and human resources) and implement research agenda of international standard. This needs to be highlighted as an activity of the department/centre.

3.2.16 On the website of the Department/Centre articles originating from the research pursued by the department at the individual and collective levels may be prominently displayed. This should also include highlights of exceptional achievements. The site may be updated regularly. Annual special publication (web-based) on research achievements may be considered.

3.2.17 Each Department/Centre may consider holding regular conference (biannual) of its own. The idea is to get experts from across the world and deliberate (and collaborate) on the latest topics. Some of the participants may be collaborators of the department/centre.

3.2.18 The Department/Centre may also consider recognizing special achievements of faculty/research-staff/student considering contributions, particularly in advancing research and publicize it.

3.2.19 The Department/Centre may initiate dialogues with industries so that appropriate collaboration could be established.

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3.2.20 A patent support cell that actively engages the community in the process, starting from invention to completion of the patent process may be established as an independent unit. The same cell can help in collaboration with office of the Dean, Industrial Interaction and Special Initiatives in commercialization.

3.2.21 Overall, an environment conducive for academic growth and performance leading to the creation of human resources, knowledge and incubation of industry start-ups through participation of all are needed for prosperity.

4.0 Teaching

4.1 Philosophy

Teaching is essential for the vitality of an academic institution. Students are the future and strength of the institution. The duty and dedication of a teacher define the culture of the institution. The eminence of the institution comes from the constant evolution and the newness of teaching represents the originality and position of the institute at the global level. A culture of communication between teachers and students and continuous innovation in teaching/learning environment contributes towards its robustness and longevity. This is where an institution such as IITG can make a significant difference. All efforts must be made in order to bring originality in teaching.

4.2 Implementation

4.2.1 Constantly evolving and updated curricula may be maintained at every level of teaching.

4.2.2 Experimentation with new ideas in courses and curricula may be encouraged and appreciated.

4.2.3 Extraordinary models in teaching and new subjects need to be created continuously.

4.2.4 Teachers need to feel and share the greatness of teaching at various levels.

4.2.5 Students need to feel the joy of learning and all students need to feel as part of the learning process.

4.2.6 Research scholars, senior post-graduate and undergraduate students need to be integrated into teaching. This may be considered as a part of training for future teachers.

4.2.7 Effective modules for classroom and outside classroom learning may be developed.

4.2.8 To attract international students and improve academic reputation, joint degree (M. Tech, MS, PhD) programmes may be pursued in collaboration with internationally reputed universities. Also, the programs may be developed in such a way that the students can complete part of their curriculum in both the institutes.

4.2.9 International joint degree programmes may be developed in specific areas of importance to the institute.

4.2.10 Course structures may also be fashioned in line with current and future needs of the industry. Faculty with background in technology relevant to industry (or from industry) may be employed even temporarily for teaching such courses.

4.2.11 In order to improve student placements, business management courses may be offered and students need to be encouraged to register for such courses.

4.2.12 Academicians of great repute from across the top-most international universities in diverse fields may be invited to offer online classroom-based courses. These courses can be offered to students residing beyond the campus of IITG. Also, international students

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(exchange-programme based students) may be allowed to take online courses offered jointly by IITG and international faculty members. This needs special considerations from across the departments and centres.

4.2.13 Well organized and publicized webinars, lectures, and seminar series involving internationally renowned scientists should be conducted regularly to improve the perception of the institute.

4.2.14 The Department/Centre may initiate efforts to integrate students at various levels on research. A particular emphasis could be given for involving students in international collaborations.

4.2.15 Special emphasis may be given to integrate undergraduate students in research as a part of the curriculum.

4.2.16 The Department/Centre may recognize students at various levels for their contributions to teaching and research.

4.2.17 The Department/Centre may initiate activities for supporting start-ups by students as extra-curricular activities. Providing additional credits to students for the initiation of start-up/industrial /research activity may be considered.

5.0 Epilogue

An institution of higher learning needs planning and implementation at levels that is internationally competitive. Resource generation and utilization are the first two steps in this direction. An academic institution needs to inculcate a culture that can see the future coming and help incubate the future in its population. This is a continuously active endeavour and the institution needs to prepare itself to maintain the lead in all spheres of learning and dissemination of knowledge. Only time-bound plans, implementation and tireless efforts by all participants - as in an orchestra - can bring great prosperity so dear to all of those longing for higher standing.

The aim of high academic standing at the international level can be achieved if all participants in an institution pursue the goal with a sense of dedication and urgency. The administration needs to be sensitive to the need of the population at large; the faculty needs to be sensitive to the creativity and its dissemination and the students need to adopt the best means to bring in youthful vigour for the learning environment and for bringing prosperity to the institution.

It is thus recommended that the present document may be considered as a starting point for future review and adoption of best means for academic excellence. This could form the basis for regular review of performance and evaluation for change needed to be adopted for future improvement. The implementation of the best means of academic advancement, some of which are recommended in this document, could see a sea change in the prosperity of the institution and global perception of IITG that is so dear for evaluation.

The best means would come through collective reflections and adopting measures that are acceptable and for bringing advancement to the academic performance of the institution. It is recommended that the strategies proposed here are reviewed and refreshed on a regular basis to align with the future change and requirements.

6.0 Annexures

Annexure 1
Administration

A1.1 The overall campus may be made clean and green and be maintained that way.

A1.2 All places of common institutional use may be kept very organized and clean at all times. Careful planning and implementation may be followed.

A1.3 The campus may be made green with a plan that has themes based on locations. Thus, tree plantation and replacement may be made according to the plan, when implemented would make the campus well organized and attractive. Seasonal flower blooming may bring an extraordinary view to the campus.

A1.4 The quality of water supplied to campus must be of high international standard. The pipe water needs to be of drinking quality as such.

A1.5 The whole of campus may be made fully WiFi enabled with high speed internet.

A1.6 The road conditions may be maintained at the high levels of international standard.

A1.7 The maintenance of all the buildings may be made in such a way that they appear clean and represent good living conditions and create a welcoming atmosphere.

A1.8 All buildings may have appropriate labels and directions for ease of access.

A1.9 All roads need to have names and labels.

A 1.10 The campus facilities may have good maintenance and order.

A 1.11 Power outages and fluctuations should be avoided to prevent damage to high-end equipments and long-running important experiments.

A 1.12 Efforts should be made to follow sustainability protocols and buildings made as such can be labelled.

A 1.13 All administrative processes as deemed fit may be made online.

A 1.14 Administrative decisions at all levels must be made as fast as possible and may be taken within days of the start of the process.

A 1.15 All forms for administration purposes must be made in an easy format, keeping in view the dignity and respect for individuals.

A 1.16 All decisions may be communicated electronically immediately to the recipient.

A 1.17 The duties and responsibilities of each section of the administration across the institute should be well-defined and may be placed on the website.

A 1.18 Newly recruited faculty members and visiting professors should be extended all help to quickly settle in the campus.

A 1.19 Alternate form of energy usage in the campus may be planned and implemented at its best possible capacity.

A 1.20 Campus waste management could be made a model system.

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A 1.21 Professor-for-Life. The institute may recruit eminent personalities as professors for life. This could be from a pool of exceptionally talented and internationally recognized individuals who would be of great importance to the institute. Their tenure can be renewed (after due review) every five years.

A 1.22 Provisions such as academic leave and financial support can be given to students and faculties for academic exchange visits and collaborative work.

A 1.23 Plan for 2030: A yearly plan for administration by each section/department/centre may be made for the next ten years. This could involve administrative process reforms, student intakes, infrastructure developments and maintenance, recruitments, meetings and calendar of events, annual festivals, inviting visitors and conferences. At the end of each year the planning versus implementation may be checked for improvements. A major review at the end of five years and final review at the end of ten years may be conducted.

A1.24 For all of the above, the information may be made available on the website of IITG as per Right to Information Act 2005.

Annexure 2

Research

A 2.1 Faculties should be encouraged to publish at least one article per year (per member) in their research field. Although this can vary according to specialization and the number can change; however, discernible efforts need to be there.

A 2.2 PhD students and post-docs should be encouraged to publish at least 2 articles during their research work.

A 2.3 Incentives and highest academic grade (AS grade) might be given to those students whose project work resulted in publications.

A 2.4 Additional credits can be given to undergraduate students who have published articles during their study.

A 2.5 Institute staff can be involved in research work to generate high quality data from high end equipments and can be incentivized with publications, which can be a factor for their promotion.

A 2.6 Since open access articles tend to get the highest citations, support for publishing high impact articles in open access mode can be extended to faculty members and students.

A 2.7 To increase open access publishing, institute can avail memberships for the publishers where most articles are published from the institute (e.g. Springer nature, Elsevier, etc).

A 2.8 Faculty members need to stress on solving important problems and high impact works.

A 2.9 It must be the efforts of all faculty members to have a sponsored project at least one at a time (per member). Although this can vary according to specialization and the number can change; however, discernible efforts need to be there.

A 2.10 The institute may put the following targets to be fulfilled by the Departments/Centres. 5%, 10%, 20% and 30% of the faculty members may have collaborative projects (especially putting emphasis on collaboration with international scientists of high repute) in the next 2, 3, 4 and 5 years respectively. This should be especially applicable for Assistant and Associate Professors.

A 2.11 Institute may start with 5% (3 years) and then 10% (5 years) faculty positions for Research Professors (with posts such as Assistant Professors, Associate Professors and Professors as in other appointments). These should be young members who would be fully focused on individual and collaborative projects on topics of high significance. These should be special positions. The faculty members – once with demonstrated achievements – may be moved over to regular positions.

A 2.12 The Institute may start actively promoting collaborations with global researchers of prominence. For this, special fund needs to be created. This could be from HEFA or other Government fund or from R&D overhead. By 2021, the Institute can start with at least one such position. The faculty can spend one or a few weeks at a time and needs to collaborate

with another faculty or more than one faculty on important problems. By the end of the collaboration, publication(s) in highly reputed journal, patent(s) and/or technology transfer may be considered as the outcome.

A 2.13 The Institute may send faculty members to special laboratories of the world (in eminent research laboratories) so that through collaborations great research outcomes may be achieved. By 2021 the number of such faculty members can be around 05.

A 2.14 The institute needs to build infrastructure on specific research areas in a planned manner. The Research and Development section of the institute may plan immediately for identifying faculty members in the research areas mentioned below and any other relevant area. Then step-by-step build-up infrastructure, fund and expertise on the areas so that large-scale efforts can be made. Also, the plan must include targets that need to be fulfilled.

Quantum Information; Quantum Materials, Artificial Intelligence, High Performance Computing, Flexible and Wearable Electronics, Robotics, Disaster Management, Molecular Materials, Systems Chemistry, Systems Biology, Structural Biology, Alternative Energy Science and Technology, Water Purification Technology, Renewable Materials, Cyclic Chemistry, Molecular Medicine, and Understanding Human Consciousness. These need to be supplemented by fundamental research in the sciences, engineering, mathematics, humanities and social sciences.

A 2.15 Institute needs to create special funds for admitting PhD students from specific SAARC countries. The funds can be utilized for their fellowship. This can be started from 2021 with 5 students. Each year this number can increase at least by 10.

A 2.16 By the end of 2021 one joint laboratory between an institute of international importance and IITG can be established. This is to bring in the potential of international collaboration.

A 2.17 One-year post-doctoral fellowship for institute research scholars. This is for research scholars who are due to complete the PhD shortly and are adjudged to be able to contribute significantly towards research for the same or different laboratory. The number of such fellowship may be kept reasonably high.

A 2.18 Wherever possible, joint PhD programs can be initiated with universities where IIT Guwahati already has established MoU, so that international collaboration and exchange of students can be made.

A 2.19 All industrial units and incubation centres operating from IITG must have collaborations with research laboratories of IITG. This needs to start from 2021. This will help IITG faculty to work closely with the industry.

A 2.20 Faculty members may be assisted with secretarial help in their R&D activities. This can be done through extra staff members in the departmental/centre's offices.

A 2.21 Faculty members securing fellowship of premier national academies or highly important international academies may be provided additional salaries through allowances. Those who

have the fellowship of a single premier national academy may be made Departmental Professor with an allowance of Rs.10000/- per month. Those who have the fellowship of two or more premier academies may be made Institute Professor with an allowance of Rs. 15000/- per month. The list of the academies will be approved by the institute from time to time.

A 2.22 Institute may start reemployment of faculty as Emeritus Professor based on criteria of achievements till superannuation. This may include the number and nature of funded projects, original contributions in the field and extraordinary teaching abilities. Fellowships of prominent academies may also be taken into consideration.

Annexure 3

Teaching

A 3.1 Undergraduate and Masters degree students may be encouraged to pursue collaborative internship. One or more faculty member(s) of IITG and external member(s) of the organization where the student is expected to pursue internship may collaborate on a mutually agreed research and development project. The successful completion of the internship may be evaluated by the outcome in terms of publication, patent or any other form of knowledge creation. Student can earn 20 credits per internship. Departmental undergraduate programme committee may evaluate the process and award the credit.

A 3.2 Undergraduate students may be encouraged to pursue start-ups from the campus. Successful students can earn 50 credits for each start-up of eminence. This can be recommended by the Centre for Career Development.

A 3.3 Undergraduate students may participate in works related to social welfare. They can (each) credit for the work that can be equivalent to 50 credits in four years. However, they need to demonstrate credible evidence and new model for work in order to earn the credits. Students Affairs section may be able to handle the evaluation of such programs.

A 3.4 If a faculty member is involved along with students in creating start-ups then faculty member may be rewarded based on the outcome. A prize – which may be called as IITG Start-up Prize – may be awarded with reasonable cash rewards for both. Such recognition can be used for evaluation of faculty members in their promotion to higher posts.

A 3.5 A percentage of undergraduate students (say 5%) may be allowed to have research as a part of curriculum from the second semester of their studies and till they complete the degree. The students need to score high SPI in the first semester and continue to do so in order for them to continue. This could be a 50-credit course. They can opt for research with one or more faculty of the institute and may be allowed to collaborate with external member(s). DUPC and the faculty advisor may jointly decide on the grade. The progress may be evaluated in line with undergraduate thesis project.

A 3.6 Credits for Student Entrepreneurship: The institute may consider awarding credits to students who either individually or in a group pursue entrepreneurship during their studies at IITG. This can be applicable to students of any category. The students need to demonstrate credibly the creation and nurturing of such a prospect during their tenure here. The credits can be added sometime before successful entrepreneurships.

A 3.7 Senior-most undergraduate (final year) students may be allowed to assist the teaching laboratories as teaching assistants. Since the number may be low, scholarships may be arranged.

A 3.8 Senior-most undergraduate (final year) students may be permitted to assist as tutors in theory courses. They may be given appropriate scholarships for this.

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A 3.9 Evaluation of teaching may be conducted every semester for all courses. The scores of the teachers may be used as a criterion for promotion to higher positions.

A 3.10 Distinguished teachers' list may be published for each semester at the end of the semester. The minimum scores such as 3.5 for undergraduate and 4.5 for M.Sc. and PhD courses could be made criteria for such a selection.

A 3.11 Distant learning courses could be developed and taught through online teaching.

A 3.12 Consideration may be given to start distant learning programs in currently important areas such as artificial intelligence, robotics, clean energy and environment.

A 3.13 A students' magazine may be started to disseminate information about academic and extracurricular activities of the students and other scholars. This may also have contributions from alumnae and alumni.

Annexure 4

Enhancing the Diversity of the Undergraduate Students

A 4.1 In order to attract a greater diversity of undergraduate students, the Institute has to ensure that it has the best resources to offer, which includes qualified faculty, state-of-the-art laboratories, a well-stocked library, well maintained hostels, a safe and well-kept campus, sports infrastructure and so on.

A 4.2 A continuous evaluation of the programmes in terms of teaching, student attendance, students' feedback, students' performance and their placements should be made.

A 4.3 The courses and programmes with a good track record of teaching, student performance and placements should be highlighted and advertised on the Institute website. This will enhance the Institute's reputation and recognition with respect to certain programmes and disciplines.

A 4.4 The Institute must welcome students from all parts of the world including those who are from less privileged countries in the Indian subcontinent, Southeast Asia and Africa. As the IITs already have a reputation as premier institutes of engineering and technology that offer a far more affordable education than the West, it will be important for the Institute to cater to students from these regions of the world.

A 4.5 Institute must, through its faculty, sign Memorandums of Understanding with international universities and institutes to encourage faculty and student exchange programmes and internships.

A 4.6 Meritorious international students, especially those from socially and economically disadvantaged backgrounds, should be offered stipends and scholarships.

A 4.7 There should an active implementation of a no-discrimination and no-ragging policy that ensures the freedom and safety of international students. The Alumni and External Affairs section needs to play an active role in pursuing the interests of international students and offering them a safe and conducive working environment.

A 4.8 The AER should be prompt in responding to any grievances. The AER should regularly organise open-house events where international students can interact with other students. This will also be an opportunity to have a cultural exchange and audio-visual presentations to sensitize Indian students to foreign cultures.

Annexure 5

Faculty Career Development

A 5.1 When a new faculty member joins, he/she may be apprised of the institute policy regarding promotion so that they can set their goals accordingly. Knowing the institute's expectations concretely at the time of joining may help the new faculty member focus on targets. It can be done by Faculty Affairs Section at the institute level and HoDs at the departmental level.

A 5.2 The shortlisting criteria for internal promotions after consultation with IFAC and the DFACs can be fixed for a particular number of years (say 5 years), which may help the faculty members to focus on the targets. When the criteria is updated to align with the expected future changes, a transition period of up to a year should be given for the policy to take effect.

A 5.3 Since the institute has a sizable faculty strength in each of its departments, the fresh recruitment criteria can be set high whenever possible. Each department may deliberate on a policy for its new recruitment.

A 5.4 The AER Section of the institute can make efforts to promote IIT Guwahati among PhD students and postdoctoral fellows working in premier institutes of the world for attract excellent candidates for faculty positions.

A 5.5 The departments may consider giving less teaching load to the newly joined faculty members in the initial four semesters to assist the new faculty in settling, applying for grants, set up labs, and initiate their research activities.

A 5.6 Faculty orientation should be held regularly. A short video explaining the institute procedures for newly joined faculty members can be helpful. The R & D Section and the Stores & Purchase Section of the institute can conduct training or webinar sessions to clarify the purchase procedures.

A 5.7 New faculty members with a specific need for expensive equipment and laboratory set-up to initiate their research work, the institute may consider enhancing the seed grant amount.

A 5.8 The institute may extend technical and official support to newly joined faculty members to set up the laboratory.

A 5.9 The CIF may consider allowing new faculty members to operate some of the instruments during weekends and holidays after proper training.

A 5.10 The institute may offer visiting/honorary positions to highly reputed academicians who can contribute significantly to the departments' growth. It will help create a network for grant, fellowship, or membership in prestigious academies and provide high visibility to the institution.

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Annexure 6

Advancing the Students Career

A 6.1 Academic placements, internship opportunities in foreign universities should be encouraged and facilitated by the institute similar to that available for the corporate job placements.

A 6.2 Contacts for academic placements can be established through faculty-research collaborations, Institute MOUs and alumni connections.

A 6.3 Further route of interaction can be established by inviting faculties from reputed foreign universities to conduct joint seminars, webinars, etc with IIT Guwahati.

A 6.4 Courses should include manufacturing components to improve the placement of students in core manufacturing jobs such as ship building, aircraft manufacturing, Robotics, etc.

A 6.5 Creating course curriculum that cater to different student interests should be considered. Option for students to diversify mid-course to choose the route of a traditional degree or degree with industrial components with long industry internships/academic internships from six months up to a year should be available. (Eg. IIT Gandhinagar,)

A 6.6 Due to digitising of several services and amenities, a high requirement of digital interaction, utilization of machine learning/artificial intelligence in several research areas there is a great need for the graduating students to have computational abilities. Thus, coding and analysis courses (5 courses) should be made part of the curriculum regardless of the basic degree.

A 6.7 Option to choose communication courses should be made available to the students to improve their communication skills.

A 6.8 Considering low placement outcomes of MTech/MSc students, departments should consider modifying the course curriculum to prepare the students either for industrial or academic jobs. An option to choose different routes (academic/corporate) can be provided to the students with relevant internship opportunities.

A 6.9 Opportunities for the students to pursue research internships/innovative start-ups within the institute should be opened for the students from the early stage of their study.

A 6.10 A portal for advertising research problems by the faculties and alumni can be made for the students to access and contribute with innovative solutions.

A 6.11 Technical fairs/academic fairs inviting recruiters/foreign universities can be conducted regularly to improve the internships and placement opportunities for the students.

A 6.12 The institute may consider providing career development counselling (academic counsellors) for the students to help them choose their career path.

Here 'A' represents administration, 'R' represents research and 'T' represents teaching   19

Annexure 7

International Students

Background information

The following two tables summarize the statistics of international students intake of the Institute during the period 2015-2019.

Table 1: International students intake (2015-2019)

	Post Doc	PhD	MTech	MDes	MA	BTech	MTech (exchange)	BTech (exchange)	BTech (intern)	Research intern	Exchange
2019	--	5	4	1	--	--	5	2	--	--	--
2018	--	5	2	1	--	--	--	--	--	--	4
2017	--	3	11	--	2	3	--	--	--	5	--
2016	2	7	10	--	--	--	--	2	2	1	--
2015	--	27	17	--	--	1	--	--	--	--	--

(Data were taken from AER website)

Table 2: Countries with the number of international students (2015-2019)

SAARC Countries + Myanmar		African countries + Asian countries (Mediterranean region)		Europe and North America		Other Asian countries	
Country	No of students	Country	No of students	Country	No of students	Country	No of students
Bhutan	0	Ethiopia	47	Canada	4	Japan	7
Bangladesh	3	Syria	16	France	7	South Korea	1
Nepal	3	Israel	2	Spain	5	Vietnam	1
Afghanistan	2	Uganda	3	Germany	3	Mongolia	1
Myanmar	2	Egypt	2	Denmark	1		
Sri Lanka	0	Iran	2	Portugal	1		
Pakistan	0	Nigeria	2	Sweden	2		
Maldives	0	Kenya	1	UK	1		
		South Africa	1				
		Botswana	1				
		Nigeria	1				

(Data were taken from AER website)

The following are some important information or observations about international students intake in IIT Guwahati.

1) *Very few students from SAARC countries have studied in IIT Guwahati in the recent past.*

2) *Most of the regular students were from African countries or Asian countries of the Mediterranean region. The students from other countries were mostly exchange students or research interns.*

3) *The annual tuition fees for students from non-SAARC countries and SAARC countries are USD4000 and USD2000 respectively. The annual hostel fees are above INR 50,000.*

4) *No student from the nearest country Bhutan has taken admission in the Institute during 2015-2019. However, two PhD and one MTech Bhutanese students have taken admission in IIT Guwahati in 2020.*

ART of an Institution

A 7.1 The goal is to increase the intake of international students at IIT Guwahati to enhance international academic reputation and improve global ranking.

A 7.2 The Institute may enhance the foreign students' intake by increasing the brand awareness of IIT Guwahati among students and faculty members of the neighbouring countries through webinars and visits to foreign institutes.

A 7.3 Various degree programs of IIT Guwahati can be promoted through Indian Embassies of targeted countries. Outreach offices can be established in a few selected countries.

A 7.4 IIT Guwahati can publicize the details of various degree programs among those foreign students through foreign students who are already studying in India.

A 7.5 Offer institute scholarships to a few bright foreign students especially from SAARC countries. This will encourage some bright students from those countries to study in IIT Guwahati and they can be the brand ambassadors to improve the perception of IIT Guwahati among the students of their countries. As a first step, IIT Guwahati may consider offering 10 scholarships to the students from the nearest neighbouring country Bhutan.

A 7.6 Exchange programs or short-term courses are preferred by foreign students as many international students do not want to live in a foreign country for a long time. Institute may consider initiating more such programs with foreign institutes.

A 7.7 Joint degree programs can be customized for the collaborating institutes. For example, the IIT Guwahati-Gifu University joint degree program is a successful one.

A 7.8 Research internships can be offered to foreign students to enhance mutual perceptions between the foreign students and the Institute. It may benefit the Institute to assess the foreign students' research potential and some of these interns may be admitted to Master's or PhD program later.

A 7.9 Institute may identify alumni working in foreign countries to appoint as brand ambassadors for promoting the brand "IIT Guwahati" and its degree programs.

A 7.10 Develop specialized Infrastructure for foreign students for a comfortable living experience. This has already been initiated but the Institute may need to prepare for more hostel rooms with appropriate facilities.

A 7.11 A separate office space for international students can be established under Alumni and External Relation Section. A team of faculty members can be appointed to assist this office of the AER Section. The admission process, funding requirements, rules, and regulations should be clearly explained and easily accessible through this office.

A 7.12 Lack of familiarity with IIT entrance examinations, JEE, GATE, JAM, and CEED, is the primary challenge for foreign students to crack those examinations. Even the bright and diligent foreign students may find these examinations extremely difficult without focused training.

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Annexure 8

Increasing Brand Value

A 8.1 Dynamic and updated webpages should be maintained by the Departments and Centres. Regular updating, say weekly, of the all the webpages should be made to project the recent developments and innovations.

A 8.2 The institute website can include a virtual campus tour of the campus highlighting the facilities and other amenities.

A 8.3 The sustainability efforts made by the institute should be highlighted.

A 8.4 Strengths of IIT Guwahati in terms of opportunities, area of study, industry linkages can be prominently highlighted.

A 8.5 Alumni achievement, interviews and testimonials can be highlighted. Distinguished alumni with their achievements can be highlighted in the department and institute webpages.

A 8.6 Social media can be utilized by departments and centres to highlight their achievements.

A 8.7 A small booklet containing institute core values, achievements with future plans can be given as a souvenir to institute visitors, alumni and partnering institutions.

A 8.8 A strong institute identity and cultural values of IITG can be communicated through the institute webpage.

A 8.9 A branding message that represents the institute core values can be developed after discussion with different stakeholders.

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Names and Signatures of the committee members

Prof. Arun Chattopadhyay

(Chairman)

Anupam Saikia
11. 11. 2020

Prof. Anupam Saikia

(Member)

Prof. K. Rakhesh Singh

(Member)

4/11/20

Prof. R. Inkulu

(Member)

PKhanik

Prof. Prasenjit Khanikar

(Member)

Prof. Bithiah G. Jaganathan

(Member)

Kiran Keshavamurthy 11/17/2020

Prof. Kiran Keshavamurthy

(Member)

Shareka Iqbal

Prof. Shareka Iqbal

(Member)

Prof. P. K. Iyer,

(Convener)

Here 'A' represents administration, 'R' represents research and 'T' represents teaching   23