A Methodology for Ranking of Universities and Colleges in India

Department of Higher Education
Ministry of Human Resource Development
Government of India

NATIONAL INSTITUTIONAL RANKING FRAMEWORK

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Forward

The University Grants Commission is pleased to participate in the National Initiative on Ranking of Indian Institutions with a larger objective to improve ranking of Indian universities in World University Rankings. The Expert Committee, appointed for developing a ranking system for colleges and universities had benefit of access to the National Institutional Ranking Framework developed by the Core Committee appointed by the Ministry of Human Resource Development. The Core Committee has done a commendable job of identifying parameters that have global appeal as well as those that are country-specific reflecting problems and prospectswoven into our cultural and social fabrics. The Committee while giving emphasis on parameters that have global appeal e.g. research output, research impact, learning environment, etc. has also considered parameters like infrastructure, facilities for differently-abled persons, percentage of students from other states and other countries; percentage of women students and faculty, and percentage of economically and disadvantaged students. The Expert Committee had also given weightage to the sports and extra curricular facilities available in the campuses of universities and colleges, which, I believe emphasises on overall development of a student in a university or a college.

I would like to put on record the commendable job done by the Expert Committee, under the Chairmanship of Prof. V.S. Chauhan, Member, UGC and Emeritus Professor, International Centre for Genetic Engineering and Biotechnology (ICGEB). I would also like to acknowledge contribution of INFLIBNET centre in terms of inputs on bibliometric and citation parameters. The Centre has already developed a portal for ranking universities in India based on these parameters using widely-accepted ranking formula.

I believe that the ranking framework developed for ranking universities and colleges will have wider appeal across universities and colleges. Thousands of institutions would volunteer themselves to the ranking exercise with an aim to assess themselves on the qualitative parameters used for ranking of institutions and move upward on the quality spectrum to improve their ranking in subsequent years.

(Prof. Ved Prakash)
Chairman, UGC

Preface

The Higher education system in India is large and complex. India has the third largest higher education system in the world, behind China and the United States comprising of 795 universities, 39,671 affiliated colleges, 10,15,696 teaching faculty and 2,37,64,960 students including 29,34,989 post-graduate and 2,00,730 research scholars. The total enrolment has increased from a meagre 2 lakhs in 1947 to 238lakhs in 2013-14. Colleges, affiliated to 194 affiliating universities, constitute the bulk of the higher education system in India contributing around 86.48% of the total enrolment.

The institutions of higher education in India are in need of infusion of quality and clarity on the approach of building world-class educational institutions in the Indian context and environment. New benchmarks of quality need to be defined to help overall system to move up on the quality spectrum. Research assessment and national ranking of Indian educational institutions can play an important role in improving performance and quality of academic institutions.

The Expert Committee set-up by the UGC for developing National institutional Ranking Framework (NIRF) for Higher Education Institutions under the ambit of University Grants Commission, discussed and deliberated upon reputed globally-recognized rankings of the world-class universities and performance of Indian educational institutions in these rankings. The expert committee also invited Dr.JagdishArora, Director, INFLIBNET Centre to make a presentation on the portal developed by the INFLIBNET Centre which is already functional, based on mainly research output and citations.

This document is culmination of intense discussions and consultation held amongst the members of the Expert Committee and invitees. The Expert Committee had the benefit of expert advise from Prof.Surendra Prasad, Chairman, National Board of Accreditation, who was also a member of the Core Committee on National institutional Ranking Framework (NIRF). The Expert Committee agreed that the ranking parameters and metrics developed by the core committee are applicable universally across all sectors and disciplines.

Considering the fact that universities in India are essentially set-up for postgraduate education and research, it was decided to assign higher percentage (40%) weightage to "Research Productivity, Impact and IPR", 30 % weightage to "Teaching, Learning and Resources", 5% weightage to "Graduation Outcomes", 5% weightage to "Outreach and Inclusivity" and lastly 10% weightage to "Perception". Weightages assigned for ranking of colleges were suitably modified.

While the process would involve complexities in terms of collections and authentication of data from a very large number of institutions of higher learning, the members opined that all institutions should have an opportunity to join the process of ranking. I hope that implementation of the ranking metrics would help universities and colleges to self-assess themselves on the quality spectrum, enhance their abilities and hopefully find a place in world rankings.

Prof. V.S. Chauhan
Member, UGC and
Emeritus Professor,ICGEB

विश्वविद्यालय अनुदान आयोग
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UNIVERSITY GRANTS COMMISION
35; Feroze Shah Road
New Delhi -110 001

No.F.9-1/2015 (JS-Coord.)

October 09, 2015

Meeting Notice

Subject : Meeting of the Expert Committee to develop National Institutional Ranking Framework (NIRF) for Higher Educational Institutions under the ambit of University Grants Commission.

The Govt. of India, has launched National Institutional Ranking Framework (NIRF), developed by NBA, for educational institutions for Engineering and Management Institutions, on 29.09.2015. The Govt. of India now proposes to extend it to other disciplines like Humanities and Law, in a time bound manner.

Accordingly, to work out the modalities and finalise the framework, the Chairman, UGC has constituted following Committee.

1. Prof. V.S. Chauhan Member, University Grants Commission.	Chairman
2. Prof. Anil Sabasrabudhe Chairman, AICTE	Member
3. Prof. Surindra Prasad Former Director, IIT, New Delhi.	Member
4. Prof. Furqan Qamar Secretary General, AIU	Member
5. Prof. N.V. Varghese Director, CPRHE, NUEPA	Member
6. Prof. D.P. Singh Director, NAAC, Bangaluru	Member
7. Prof. S.S. Chahal Chairman Appeals Committee, NAAC	Member
8. Dr. Kulbir Singh Joint Secretary, UGC.	Coordinating Officer

In consultation with the Chairman of the Committee, first meeting of the committee has been convened on October 14, 2015 at 10.00 a.m. at the University Grants Commission Bahadurshah Zafar Marg, New Delhi – 110 002, under the Chairmanship of Prof. V. S. Chauhan, Member, University Grants Commission .

It is requested to make it convenient to attend the meeting at the appointed date and time.

....2/-

The TA/DA/Honorarium etc. will be paid by the UGC, as per norms, in vogue. Outstation Members are also requested to send their travel programme to the Travel Desk (ugctraveldesk@gmail.com), in the attached prescribed proforma, so that their, to and fro air tickets are arranged by the Travel Desk, UGC. They are also requested to convey their accommodation requirement.

(Dr. Kulbir Singh)
Joint Secretary

1. Prof. Anil Sabasrabudhe, Chairman, AICTE, 7th Floor, Chanderlok Building, Janpath, New Delhi (chairman@aicte-india.org)
2. Prof. Surindra Prasad, Former Director, IIT, New Delhi (sprasad@ee.iitd.ac.in)
3. Prof. Furqan Qamar, Secretary General, AIU, New Delhi (e.mail : sgoffice@aiuweb.org).
4. Prof. N.V. Varghese, Director, CPRHE, NUEPA, New Delhi (nv.varghese@nuepa.org)
5. Prof. D.P. Singh, Director, NAAC, Bangaluru (director.naac@gmail.com)
6. Prof. S.S. Chahal, Chairman, Appeals Committee, NAAC (chahalsspau@yahoo.com)

Copy for information to :

1. Prof. V.S. Chauhan, Member Commission (e.mail : viranderschauhan@gmail.com).
2. PS to Chairman, UGC
3. PS to Secretary, UGC

Executive Summary

1. Background

This document is a part of the National Institutional Ranking Framework with emphasis on methodology for rankinguniversities and colleges across India. The methodology draws from the broad understanding arrived at by the Core Committee (CC) set up by Ministry of Human Resource Development (MHRD) that defines broad parameters to be used for ranking various universities and institutions. The ranking parameters agreed by the Core Committee (CC) are generic in nature that have been suitably adapted for evolving a detailed methodology for ranking universitiesand colleges.

The main features of the methodology suggested are as follows:

i) It is recommended to set-up a Committee, which will oversee the implementation of ranking work for the first year, after which a suitable Ranking Agency duly authorized to receive and verify the data, and declare the rankings, may be set up.

ii) This document identifies a set of suitable forms in which these parameters can be easily measured and verified across a variety of universities and colleges.

iii) A strategy is suggested for calculating scores to measure the performance of the universitiesand colleges across each such parameter. This will help to obtain an overall score for obtaining the institution rank.

iv) Separate ranking formulae for universities and colleges issuggested to ensure that institutionsare compared within an appropriate peer group of institutions, and provided a level-playing field.

v) A system for data collection from public bodies and random sample checks is suggested for each parameter.

2. Salient Features

2.1. Methodology involves defining a set of metrics for ranking of universities and colleges based on the parameters agreed upon by the Core Committee (CC).

2.2. These parameters are organized into five broad categories that have been further grouped into a number of sub-categories. Each broad category has an overall weight assigned to it. Within each category, the sub-categoriesalso have an appropriate weight distribution.

2.3. An attempt is made here to first identify the relevant data needed to suitably measure the performance score under-each sub-category. Emphasis has been laid on identifying data that is easy to generate and easy to verify, if needed, in the overall interest of transparency.

2.4. A suitable metric is then worked out, based on this data, which computes a score under each sub-category. The sub-category scores are then added to obtain scores for each individual category. The overall score is computed based on the weights allotted to each category. The overall score can take a maximum value of 100.

2.5. The institutions can then be rank-ordered based on their scores.

3. Ranking based on Institutional Category

3.1. In view of the distinct primary mandate and objectives of universities and colleges, separate ranking is designed for these two distinct categories of institutions.

3.2. The universities would include institutions of national importance set-up by the Acts of Parliament, Central universities, State universities, Deemed-to-be universities, Private universities and other autonomous degree-awarding institutions. The colleges would include Autonomous Colleges that are affiliated to universities and do not enjoy full academic autonomy.

3.3. While score computations for some of the parameters are similar for both of these categories on most counts, the benchmarks are somewhat different on a few parameters, to take into account the ground realities, which may be very different for the two categories. This also creates a level playing field for both categories.

3.4. The weights assigned to different components have been adjusted to reflect different mandates and expectations from universities and colleges.

3.5. Even where the assessment metrics are similar, their computation (where percentile calculations or normalizations are involved) is based on their respective categories.

3.6. If implemented in this manner and spirit, the ranking methodology will produce two separate rankings, one for universities and one for colleges.

4. Data Collection

4.1. In view of the absence of a reliable and comprehensive database that could supply all relevant information required for computing the scores for ranking, it is imperative that the university and colleges that are desirous of participating in the ranking exercise will be required to provide the data in the prescribed format.

4.2. It is recommended that the data submitted by university and colleges onto NIRF website, should also be made available on publicly visible website by these institutions in the interest of transparency. The data should remain there in an archived form for the next 3 years to enable easy cross-checking, whenever required. Institutions that fail to do this honestly or resort to unethical practices should be automatically debarred from participation in the future ranking exercise for a period of two years. Their names may also be displayed on the ranking portal indicating the nature of their unethical conduct. An attempt should also be made by the Ranking Authority to maintain the archived form of this data for due diligence as needed.

4.3. The Ranking Authority or Agency or Board should be empowered to take up a random check on records of the institution and audited accounts to ensure that the principles of ethical behaviour are being adhered to.

4.4. For some of the parameters, the data could be populated from internationally available bibliographic and citation databases (like Scopus, Web of Science, Indian Citation Index and Google Scholar). This is indicated in the Assessment Metrics. The Ranking Agency should directly access data from these resources, if necessary.

4.5. Similarly, some data can be made available through a national effort. For example, data about success in public examinations can be easily compiled, if all concerned bodies (UPSC, State PSCs, SSC, GATE, NET, CAT, GMAT, CMAT, etc.) conducting such examinations prepare an institution-wise list providing details of the total number of aspirants and successful candidates from each institution.

4.6. Similarly universities, including affiliating ones, should be able to provide examination results data in the appropriate format to evaluate the component of Graduate Outcomes (GO).

5. Implementation Details

5.1 A Committee should be set up to oversee the process initially till an appropriate Ranking Agency is established.

5.2 A suitable Ranking Authority/Agency should be identified orformed and empowered.

5.3 The Ranking Agency should invite institutions intending to participate in the ranking exercise to submit their applications in the prescribed format by a specified date, every year through an online portal to be set-up for this purpose.

5.4 The Ranking Agency will extract the relevant data from the online portal, compute various metrics and rank institutions. This process should be completed and rankings published before commencement of the academic session.

Part – I
Parameters and Metrics for Universities

Overview: Universities

Summary of Ranking Parameters for Ranking Universities

S. No.	Parameters	Marks	Weightage
1	Teaching, Learning & Resources (TLR)	100	0.30
2	Research Productivity, Impact and IPR (RPII)	100	0.40
3	Graduation Outcome (GO)	100	0.05
4	Outreach and Inclusivity (OI)	100	0.15
5	Perception (PR)	100	0.10

Cumulative Sheet

Sl. No.	Parameter	Weightage / Marks
1.0	**Teaching, Learning and Resources (TLR)**	**(Ranking Weightage =0.30)**
	A. Teacher Student Ratio with emphasis on Permanent Faculty	25 Marks
	B. Combined Metric for Faculty with Ph.D. and Experience	25 Marks
	C. Metric for Library and Laboratory Facilities	40 Marks
	D. Metric for Sports and Extra Curricular Facilities	10 Marks
2.0	**Research Productivity, Impact and IPR (RPII)**	**(Ranking Weightage =0.40)**
	A. Combined Metric for Publications	45 Marks
	B. Combined Metric for Citations	45 Marks
	C. Intellectual Property Right	10 Marks
3.0	**Graduation Outcome (GO)**	**(Ranking Weightage =0.05)**
	A. Combined Performance in University Examinations	50 Marks
	B. Combined Performance in Public Examinations	50 Marks
4.0	**Outreach and Inclusivity (OI)**	**(Ranking Weightage =0.15)**
	A. Outreach Footprint(Continuing Education, Services)	25 Marks
	B. Percentage of Students from Other States/Countries	25 Marks
	C. Percentage of Women Students and Faculty	20 Marks
	D.Percentage of Economically and Socially Disadvantaged Students	20 Marks
	E. Facilities for Differently Abled Persons	10 Marks
5.0	**Perception (PR)**	**(Ranking Weightage =0.10)**
	Process for Peer Rating in Category	50 Marks
	Application to Seat Ratio	50 Marks

1

Teaching, Learning &Resources (TLR)

Teaching, Learning & Resources (TLR) – 100 Marks, Ranking

Weight : 0.30

Overall Assessment Metric:

TLR = (FSR + FQE + LL + SEC)

1.(a) Faculty-Student Ratio with emphasis on Permanent Faculty (FSR) – 20 Marks

This assessment will be based on the ratio of number of regular facultymembers in the institute and total sanctioned/approved intakeconsidering all UG & PG programs.

Regular appointment means faculty on full-time basis with no time limiton their employment. However, faculty on contract basis for a period ofnot less than three (3) years, on gross salary similar to those who arepermanent can also be included.

Faculty members with Ph.D. qualifications andNET or SLET-qualified with Master's degree will be counted.

Visiting faculty (with a Ph.D.) who are visiting the institution on a full-time basis for at least one semester can be included in the count for thatsemester.

The benchmark is set as a ratio of 1:15for scoring maximum marks.

Assessment metric for "Faculty-Student Ratio" will be the same for universities and colleges.

FSR=20×[15×(F/N)]

Here,

N: Total number of sanctioned seats in the university consideringall UG and PG programs, including the Ph.D. program.

$F = F_1 + 0.3F_2$

F_1: Full time regular faculty of all UG and PG programs in the previousyear.

F_2 : Eminent teachers/ faculty (with Ph.D.) visiting the institution forat least a semester on a full-time basis can be counted (with a count of0.5for each such visiting faculty for a semester) in the previous year.Expected ratio is 1:15 to score maximum marks.

For F/N < 1: 50, FSR will be set to zero.

Data Collection

From the concerned universities in prescribed format through an online interface to be developed on NIRF website. As mentioned in the preamble, the university will be eligible for ranking, if all relevant, and updated data about the faculty members (in the previous three (3) years) is available on a publicly visible website. The data will be archived and also maintained by the ranking agency.

Data Verification

By the Ranking Agency on a random sample basis.

1.(b) Combined Metric for Faculty with Ph.D. and Experience (FQE) – 30 Marks

Equal weightage of 15 Marks each is assigned to qualifications and experience.

Doctoral Qualification

This parameter will be measured on the basis of percentage of faculty with Ph.D. in a relevant field. The expected benchmarks would be different for universities and colleges to account for ground realities.

Assessment metric for universities on Ph.D. qualification is as follows:

FQ =15× (F/95), for F≤95%;

FQ = 15, for F > 95%.

Here,

F is the percentage of Faculty with Ph.D. averaged over the previous three (3) years, (implies that the benchmark is a minimum of 95% to get the maximum score, decreasing proportionately otherwise).

Experience Metric

Experience should normally be assessed based on the relevant experience of the faculty members. Relevance here means experience pertaining to the subject area being taught by the faculty member.

More specifically,

$$E = \frac{\sum Ei}{F}$$

Here,

E_i denotes the experience of the i_{th} faculty member.

For simplicity, however, $\mathbf{E_i}$ may also be calculated from the age profile of the faculty members as follows:

$E_i = A_i - 30$, for $A_i \leq 45$ years

$E_i = 15$, for $A_i \geq 45$ years.

Assessment Metric for Experience:

$FE = 15 \times (E/15)$, for $E \leq 15$ years

$FE = 15$, for $E > 15$ years.

Here,

E is the average years of experience of all faculty members as calculated above.

This implies that the benchmark experience is to be 15 years to score maximum marks, decreasing proportionately otherwise.

Data Collection

Universities to submit information in a tabular form indicating faculty name, age, qualifications (indicating the university attended for the qualifying degree) and experience. Updated data for the last three (3) years should be available on a publicly available website, and suitably archived for consistency check in subsequent years.

Data Verification

On a random sampling basis.

Combined Metric for Faculty Qualifications and Experience:

FQE = FQ + FE

1.(c) Metric for Library and Laboratory Facilities (LI&LB) – 40 Marks

It is recommended to assign equal weights (20 Marks each) to Library and Laboratory facilities.

Library (LI)

LI = 20 × (Percentile parameter on the basis of annual expenditure(EXLI) on library resources per student)

EXLI = EXLIPS + EXLIES
EXLIPS = EXLIP/N
EXLIES = 2 × EXLIE/N

EXLIP: Actual Annual Expenditure on Physical Resources, Books,Journals, etc.

EXLIE: Actual Annual Expenditure on Electronic Resources including electronic books,electronic journals, etc.

N: Total Number of Students

If this expenditure is below a threshold value to be determinedseparately for each category of institutions,EXLI = 0

Laboratories (LB)

LB = 20 × (Percentile parameter on the basis of annual expenditure(EXLB) on creation and maintenance of laboratory resources)

EXLB = Actual Annual Expenditure on creation and maintenance of laboratory resources

If this expenditure is below a threshold value to be determined separately for each category of institutions, EXLB = 0

Combined Metric for Library and Lab Resources is as follows:

LL=LI + LB

1.(d) Metric for Sports Facilities and Extra-Curricular Activities (SEC) – 10 Marks

Equal weights will be given to sports facilities, sports budget and top performances, and extra-curricular activities.

Extra-Curricular (EC) activities may typically include, but not be limited to Clubs/Forums, NCC, NSS, etc.

Parameters to be used are as follows:

A: Sports facilities area per student;
B: Actual expenditure per student on sports and EC activities; and
C : Number of top positions in inter- college sports and EC events

Each parameter to be evaluated on a percentile basis to obtain the parameters p(A), p(B) and p(C). Weights assigned to three (3) components are 0.5, 0.25 and 0.25 respectively.

p(C) = 1, if a college has at least 3 winners of a State or National level event.

Assessment Metric for Sports and Extracurricular Activities is as follows:

SEC = 10×[p(A)/2 + p(B)/4 + p(C)/4]

Data Collection

To be obtained from the Universities.

Data Verification

By Ranking Agency on a random sample basis.

2

Research Productivity, Impact and IPR (RPII)

Research Productivity, Impact and IPR (RPII) – 100 Marks

Ranking Weight : 0.40

Overall Assessment Metric: RPII = (PU + CI + IPR)

2.a. Combined Metric for Publications (PU) – 45 Marks

The publications indexed in Scopus, Web of Science, Google Scholar and Indian Citation Index will be counted for assessment. An averagevalue **P** for the previous three (3) years will be computed as detailedlater in this item.

The universities will submit faculty publications list as supportinginformation. However, the primary sources of information will beScopus, Web of Science,Google Scholarand Indian Citation Index.

Books/ monographs should have ISBN number and published byreputed publishers.

Assessment Metric for publications is as follows:

PU = 45× Percentile parameter (expressed as a fraction) on thebasis of (P/F)

P is the number of publications = Weighted average of numbers givenby Scopus, Web of Science, Google Scholar and Indian Citation Index over the previousthree years.

P = 0.3PW + 0.5PS + 0.1PG+0.1PI

Here,

PW: Number of publications reported in Web of Science.
PS: Number of publications reported in Scopus.
PG: Number of publications reported in Google Scholar.
PI: Number of publications reported in Indian Citation Index.
F:is the number of regular faculty members as used in Item 1.

2.b. Combined Metric for Citations (CI) – 45 Marks

The assessment is to be based on the ratio of the total number of citations of publications published in the previous three (3) years. For all such publications, an average of the numbers from the four popular databases will be used.

Institutions will be asked to provide information in a tabular form giving relevant details. However, the primary sources will be the fourcitationdatabases, namely Scopus, Web of Science, Google Scholar and Indian Citation Index.

Assessment Metric for citations is as follows:

CI = [45 × Percentile parameter (expressed as a fraction) on thebasis of (CC/P) for Category A × Percentile parameter on thebasis of P]

Here,

CC is Total Citation Count
P is total number of publications over this period as computed for 2a.

CC is computed as follows

CC = (0.3 CCW + 0.5 CCS + 0.1 CCG+0.1 CCI)

Here,

CCW : Total Number of Citations reported in Web of Science.
CCS : Total Number of Citations reported in Scopus.
CCG: Number of Citations reported in Google Scholar.
CCI: Total Number of Citations reported in Indian Citation Index

{CI = 45× (CC/F)}

2.c. Intellectual Property Rights (IPR) – 10 Marks

IPR and Patents: Granted, Filed, Licensed

Marks distribution

Granted : 4 Marks

Filed : 2 Marks

Licensed : 4 Marks

IPR will broadly include information based on patents and designs for the last three (3) years.

Assessment method will be identified and calculation will be made as per following formula:

IPR = PF + PG + PL

Assessment of IPR on patents (including designs) filed:

PF = 2 x Percentile parameter (expressed as a fraction) on the basis of PF/F)

Assessment of IPR on patents (including designs) granted:

PG = 4 x Percentile parameter (expressed as a fraction) on the basis of PG/F)

Assessment of IPR on patents (including designs) Licensed:

PL = 2 x I(P) + 2 x Percentile parameter (expressed as a fraction) on the basis of EP/F)

PF is the number of patents, copyrights, designs filed.
PGis the number of patents, copyrights, designs granted/registered.
PLis the number of patents, copyrights, designs licensed.
EP is the total earning from the patents etc. during the last three (3) years.
Fis the number of permanent faculty members.
I(P) = 1, if at least one patent was licensed in the previous three years (or) at least one technology transferred during this period;
I(P) = 0, Otherwise,

Data Collection

To be made available by the concerned institution On-line.

Data Verification

By Ranking Agency on random sample basis.

3

Graduation Outcome (GO)

Graduation Outcome (GO) –100 Marks

Ranking Weight: 0.05

Overall Assessment Metric: GO = (UE + PE)

3.a. Combined Performance in UniversityExaminations (UE) – 50 Marks

Assessment in respect of university examinations will be basedon the percentage of students clearing/complying with the degreerequirements in the minimum graduation time. Data will be obtainedfrom the universities or the concerned colleges.

Here,

UE = University Examinations = 50 Marks

For University Examinations,

UE = 50 × (N/80)

Here,

N is the percentage of students (as a fraction of those admitted forthe batch, averaged over the previous three (3) years) graduating inminimum time.

Benchmark

At least 80% students should graduate in minimum time to scoremaximum Marks.

Data Collection

UE data from institutions to be verified on a random sampling basis, butpreferably directly from the University examination sections, if possible.

3.b. Combined Performance in Public Examinations (PE) – 50 Marks

Assessment in respect of public examinations will be based on cumulative percentile of students (as a fraction of the number appearing) qualifying in public examinations (such as UPSC, State PSCs, SSC, GATE, NET, CAT, etc.) from an institution, out of the cumulative number of successful students in that year. An effort should be made to connect with examination conducting agencies to prepare institute wise data.

Here,

PE = Public Examinations = 50 Marks

For Public Examinations,

we first calculate the percentile parameter **p** as follows:

Let , $\mathbf{f_i}$ be the fraction of successful students from a given institution (ratio of the number of successful and the number of appearing) for examination **i**.

$\mathbf{f_i}$ = 0, when either number of appearing or successful candidates is nil.
Let, $\mathbf{t_i}$ be the toughness parameter of examination **i**.

Then,

$\mathbf{p}$ = **Fraction percentile of** $\mathbf{\Sigma((1 - t_i)\, f_i}$ **,**

Where,

(Number of successful candidates in examination i)

t_i = (Number of candidates appearing in examination i)

Cumulative data is thus weighted across different examinations according to their toughness index, which is measured by the ratio of successful candidates to the total number appearing.

PE = 50 × Cumulative percentile of students from the institution in the cumulative data of Public Examination

Data Collection

PE data from Public Service Commissions and Examining bodies.

4

Outreach and Inclusivity (OI)

Outreach and Inclusivity (OI) – 100 Marks

Ranking Weight: 0.15

Overall Assessment Metric:

OI = (CES + RD+WS +ESCS + PCS)

4.a. Outreach Footprint (Continuing Education, Services)(CES) – 25 Marks

Information to be sought from institutions regarding:

- ☞ Names and number of refresherand orientation courses organized with numbers of participants. Teacher Training and related outreach activities.
- ☞ Participation in e-content creation programmes such as e-PG Pathshala, CEC, NME-ICT, etc.
- ☞ Interactions with industry.
- ☞ Facilitation of faculty in quality improvement.
- ☞ Any other activities falling in this category.

Assessment Metric

CES = (25 × Percentile parameter based on N)
Here,

N: Number of participation certificates issued every year (averagedover previous three (3) years) to teachers /industry personnel, etc.for outreach programs of six (6) days or more.Percentile parameter calculated separately for each category ofinstitutions.

4.b. Percentage of Students from other States/Countries -Regional Diversity (RD) – 25 Marks

Assessment Metric:

RD = (18 × Percentile fraction of total students admitted (averagedover past 3 years) from other states + 7 × Percentile fractionof students admitted (averaged over past 3 years) from othercountries)

4.c. Percentage of Women Students and Faculty(WS) – 20 Marks

$WS = 8 \times (N_1/50) + 8 \times (N_2/20) + 4 \times (N_3/2)$

Here,

N_1 and **N_2** are the percentage of women students and faculty respectively.**N_3** is the number of women members of eminence as Institute Head oron the Governing Board (of its own university).

Benchmarks

50% women students and 20% women faculty and two (2) women as InstituteHead or in the Governing Board expected to score maximum marks.

4.d. Percentage of Economically and Socially DisadvantagedStudents (ESDS) – 20 Marks

ESCS =20× (N/50)

Here,

N is the percentage of economically and socially disadvantaged Studentsaveraged over the previous 3 years.

Benchmark

50% economically and socially disadvantaged students should beadmitted to score maximum marks.

4.e. Facilities for Differently Abled Persons (DAP) – 10 Marks

DAP = 10 Marks

The marks for facilities provided to Differently Abled Persons are as follows:

Ramps	:	2 Marks
Lifts	:	2 Marks
Walking aids	:	2 Marks
Disabled friendly toilets	:	1.5 Marks
Braille / Special Labs	:	1 Mark
Audio Visual Aids including software	:	1.5 Marks

5

Perception (PR)

Perception (PR) – 100 Marks

Ranking Weight: 0.1

Overall Assessment Metric: P = (PR+SR)

5.a. Process for Peer Rating in Category (PR) – 50 Marks

Peer rating is to be done through a survey conducted over a large categoryof academics, institution heads, HR heads of employers, members of funding agencies in Government, Private sector, NGOs, etc.

Lists of universities may be obtained and a comprehensive listmay be prepared taking into account various sectors, regions, etc. which may be circulated periodically. Online survey may be carried out in a time-bound fashion involving faculty, students and other stakeholders.

5.b. Application to Seat Ratio (SR) – 50 Marks

Application to Seat Ratio will be based on the ratio of number of students applying for a course and total sanctioned / approved intake considering all UG & PG programs. Data will be obtained from the universities or the concerned colleges.

Assessment metric will be the same for University and Colleges and will be calculated individually for each category.

SR=50× (R/R*)

Here,

R = A/S

R* is the maximum value of R in the considered set of institutions.

S: Total number of sanctioned/approved intake of the institution considering all UG and PG Programs.

A: Total number of applications received in the institution considering all UG and PG Programs.

Part – II
Parameters and Metrics for Colleges Universities

Overview: Colleges

Summary of Ranking Parameters Finalized by MHRD

Sr. No.	Parameters	Marks	Weightage
1	Teaching, Learning & Resources (TLR)	100	0.40
2	Research Productivity, Impact and IPR (RPII)	100	0.20
3	Graduation Outcome (GO)	100	0.15
4	Outreach and Inclusivity (OI)	100	0.15
5	Perception (PR)	100	0.10

Cumulative Sheet

Sl. No.	Parameter	Weightage / Marks
1.0	**Teaching, Learning and Resources (TLR)**	**(Ranking Weightage =0.40)**
	A. Teacher Student Ratio with emphasis on Permanent Faculty	30 Marks
	B. Combined Metric for Faculty with Ph.D. and Experience	30 Marks
	C. Metric for Library and Laboratory Facilities	30 Marks
	D. Metric for Sports and Extra Curricular Facilities	10 Marks
2.0	**Research Productivity, Impact and IPR (RPII)**	**(Ranking Weightage =0.20)**
	A. Combined Metric for Publications	45 Marks
	B. Combined Metric for Citations	45 Marks
	C. Intellectual Property Rights	10 Marks
3.0	**Graduation Outcome (GO)**	**(Ranking Weightage =0.15)**
	A. Combined Performance in University	50 Marks
	B. Outcome of Examination: Public, /NET	50 Marks
4.0	**Outreach and Inclusivity (OI)**	**(Ranking Weightage =0.15)**
	A. Outreach Footprint(Continuing Education, Services)	25 Marks
	B. Percentage of Students from Other	25 Marks
	C. Percentage of Women Students and Faculty	20 Marks
	D. Percentageof Economically and Socially Disadvantaged Students	20 Marks
	E. Facilities for Differently Abled Persons	10 Marks
5.0	**Perception (PR)**	**(Ranking Weightage =0.10)**
	Process for Peer Rating in Category	50 Marks
	Application to Seat Ratio	50 Marks

1

Teaching, Learning & Resources (TLR)

Teaching, Learning & Resources (TLR) – 100 Marks, Ranking

Weight : 0.40

Overall Assessment Metric:

TLR = (FSR + FQE + LL + SEC)

1.a. Faculty-Student Ratio with emphasis on Permanent Faculty (FSR) – 30 Marks

This assessment will be based on the ratio of number of regular faculty members in acollege and total sanctioned/approved intake considering all UG & PG programs.

Regular appointment means faculty on full-time basis with no time limit on their employment. However, faculty on contract basis for a period of not less than three (3) years, on gross salary similar to those who are permanent can also be included.

Faculty members with Ph.D. qualifications andNET or SLET-qualified with Master's degree will be counted.

Visiting faculty (with a Ph.D.) who are visiting the institution on a full time basis for at least one semester can be included in the count for that semester.

The benchmark is set as a ratio of 1:20 for scoring maximum Marks. Assessment metric will be the same for University and Colleges.

FSR=30×[20×(F/N)]

Here,

N: Total number of sanctioned students in the institution considering all UG and PG Programs, including the Ph.D. program.

$F = F_1 + 0.3F_2$

F_1: Full time regular faculty of all UG and PG Programs in the previous year.

F_2 : Eminent teachers/ faculty (with Ph.D.) visiting the institution for at least a semester on a full time basis can be counted (with a count of 0.5 for each such visiting faculty for a semester) in the previous year. Expected ratio is 1:20 to score maximum Marks.

For F/N < 1: 50, FSR will be set to zero.

Data Collection

From the concerned Institutions in prescribed format on an On-line facility. As mentioned in the preamble, an institution will be eligible for ranking, if all relevant, and updated data about the faculty members (in the previous three (3) years) is available on a publicly visible website. The data will be archived and also maintained by the ranking agency.

Data Verification

By the Ranking Agency on a random sample basis.

1.b. Combined Metric for Faculty with Ph.D. and Experience (FQE) – 30 Marks

Equal weightage of 15 Marks each is assigned both for qualifications and experience.

Doctoral Qualification

This will be measured on the basis of percentage of faculty with Ph.D. in a relevant field. NET-qualified faculty registered for Ph.D. may also be counted. However, faculty with only post-graduation, i.e. MA / M.Sc. / M.Com cannot be counted.The expected benchmarks would be different for universities and colleges to account for ground realities.

Assessment metric for Colleges on Ph.D. Qualification is as follows:

FQ =15× (F/95), for F≤95%

FQ = 15, for F > 95%.

Here,

F is the percentage of Faculty with Ph.D. averaged over the previous three (3) years, (implies that the benchmark is a minimum of 95% to get the maximum score, decreasing proportionately otherwise).

Experience Metric

Experience should normally be assessed based on the relevant experience of the faculty members. Relevance here means experience pertaining to the subject area being taught by the faculty member. More specifically,

$$E = \frac{\sum Ei}{F}$$

Here,

$\mathbf{E_i}$ denotes the experience of the $\mathbf{i_{th}}$ faculty member.

For simplicity, however, $\mathbf{E_i}$ may also be calculated from the age profile of the faculty members as follows:

$E_i = A_i - 30$, for $A_i \leq 45$ years

$E_i = 15$, for $A_i \geq 45$ years.

Assessment Metric for Experience:

FE = 15×(E/15), for E ≤ 15 years

FE = 15, for E > 15 years.

Here,

E is the average years of experience of all faculty members as calculated above.

This implies that the benchmark experience is to be 15 years to score maximum marks, decreasing proportionately otherwise.

Data Collection

Universities to submit information in a tabular form indicating faculty name, age, qualifications (indicating the university attended for the qualifying degree) and academic experience. Updated data for the last three (3) years should be available on a publicly available website, and suitably archived for consistency check in subsequent years.

Data Verification

On a random sampling basis.

Combined Metric for Faculty Qualifications and Experience is as follows:

FQE = FQ + FE

1.c. Metric for Library and Laboratory Facilities (LI&LB) – 30 Marks

Equal weightage of 15 Marks each is proposed to be assigned to Library and Laboratory facilities.

Library (LI)

LI = 15 × (Percentile parameter on the basis of annual expenditure(EXLI) on library resources per student)

EXLI = EXLIPS + EXLIES
EXLIPS = EXLIP/N
EXLIES = 2 × EXLIE/N

EXLIP: Actual Annual Expenditure on Physical Resources, Books,Journals, etc.

EXLIE: Actual Annual Expenditure on Electronic Resources, Books,Journals etc.

If this expenditure is below a threshold value to be determinedseparately for each category of institutions,EXLI = 0

Laboratories (LB) (What about Arts, commerce, law colleges??)

LB = 15 × (Percentile parameter on the basis of annual expenditure(EXLB) on creation and maintenance of laboratory resources)

If this expenditure is below a threshold value to be determinedseparately for each category of institutions, EXLB = 0

Combined Metric for Library and Lab Resources:

LL=LI + LB

1.d. Metric for Sports Facilities and Extra-Curricular Activities (SEC) – 10 Marks

Equal weights will be given to sports facilities, sports budget and top performances, and extra-curricular activities.

Extra-Curricular (EC) activities may typically include, but not be limited to clubs, forums, NCC, NSS, etc.

Parameters to be used for sports and extra-curricular facilities are as follows:

- A: Sports facilities area per student;
- B: Actual expenditure per student on Sports and EC activities; and
- C: Number of top positions in inter-colleges sports and EC events.

Each parameter hasto be evaluated on a percentile basis to obtain the parameters p(A), p(B) and p(C). Weights assigned to three(3) components are 0.5, 0.25 and 0.25 respectively.

p(C) = 1, if a college has at least 3 winners of a State or National levelevent.

Assessment Metric for Sports and Extracurricular Activities:

SEC = 10×[p(A)/2 + p(B)/4 + p(C)/4]

Data Collection

To be obtained from the institutions.

Data Verification

By Ranking Agency on a random sample basis.

2

Research Productivity, Impact and IPR (RPII)

Research Productivity, Impact and IPR (RPII) – 100 Marks

Ranking Weight : 0.20

Overall Assessment Metric: RPC = (PU + CI)

2.a. Combined Metric for Publications (PU) – 45 Marks

Thepublications indexed in Scopus, Web of Science, Google Scholarand Indian Citation Index only will be counted for assessment. An average value **P** for the previous three (3) years will be computed as detailed later in this item. The colleges will submit list of publications published by their faculty as supporting information. However, the primary sources of information will be Scopus, Web of Science, Google Scholar and Indian Citation Index.

Books/ monographs should have ISBN number and published by reputed publishers.

Assessment Metric for Publications is as follows:

PU = 45× Percentile parameter (expressed as a fraction) on thebasis of (P/F)

P is the number of publications = Weighted average of numbers givenby Scopus, Web of Science, Google Scholar and Indian Citation Index over the previous three years.

P = 0.3PW + 0.5PS + 0.1PG+0.1 PI

Here,

PW: Number of publications reported in Web of Science
PS: Number of publications reported in Scopus
PG: Number of publications reported in Google Scholar
PI: Number of publications reported in Indian Citation Index
F is the number of regular faculty members as used in Item 1

2.b. Combined Metric for Citations (CI) – 45 Marks

The assessment is to be based on the ratio of number of citations in the previous three (3) years to the number of papers published during this time. A weighted average of the numbers from the four popular citation databases will be used.

Institutions will be asked to provide information in a tabular form giving relevant details. However, the primary sources will be the fourcitationdatabases, namely Scopus, Web of Science, Google Scholar and Indian Citation Index.

Assessment Metric for Citations is as follows:

CI = [50 × Percentile parameter (expressed as a fraction) on the basis of (CC/P) for Category A × Percentile parameter on the basis of P]

Here,

CC is Total Citation Count over previous 3 years, and
P is total number of publications over this period as computed for 2a.
CC is computed as follows

CC = (0.3 CCW + 0.5 CCS + 0.1 CCG+0.1 CCI)

Here,

CCW : Total Number of Citations reported in Web of Science.
CCS : Total Number of Citations reported in Scopus.
CCG : Total Number of Citations reported in Google Scholar.
CCI: Total Number of Citations reported in Indian Citation Index.

2.c. Intellectual Property Right (IPR) – 10 Marks

IPR and Patents : Granted, Filed, Licensed

Marks distribution

Granted : 4 Marks

Filed : 2 Marks

Licensed : 4 Marks

IPR will broadly include information based on designs and patents for the last three (3) years.

Assessment method will be identified and calculation will be made as per following formula:

IPR = PF + PG + PL

Assessment of IPR on patents (including designs) filed:

PF = 2 x Percentile parameter (expressed as a fraction) on the basis of PF/F)

Assessment of IPR on patents (including designs) granted:

PG = 4 x Percentile parameter (expressed as a fraction) on the basis of PG/F)

Assessment of IPR on patents (including designs) licensed:

PL = 2 x I(P) + 2 x Percentile parameter (expressed as a fraction) on the basis of EP/F)

PF is the number of patents, copyrights, designs filed.
PGis the number of patents, copyrights, designs granted/registered.
PLis the number of patents, copyrights, designs licensed.
EP is the total earning from the patents etc. during the last three (3) years.
Fis the number of permanent faculty members.
I(P) = 1, if at least one patent was licensed in the previous three years (or) at least one technology transferred during this period;
I(P) = 0, Otherwise,

Data Collection:

To be made available by the concerned institution On-line.

Data Verification:

By Ranking Agency on random sample basis.

3

Graduation Outcome (GO)

Graduation Outcome (GO) –100 Marks

Ranking Weight: 0.15

Overall Assessment Metric: GO = (UE + PE)

3.a. Combined Performance in University Examinations (UE) – 50 Marks

Assessment in respect of University examinations will be based on the percentage of students clearing/complying with the degree requirements in the minimum graduation time. Data will be obtained from the universities or the concerned colleges.

Here,

UE = University Examinations = 50 Marks

For Public Examinations,

UE = 50 × (N/80)

Here,

N is the percentage of Students (as a fraction of those admitted for the batch, averaged over the previous three (3) years) graduating in minimum time.

Benchmark

At least 80% students should graduate in minimum time to score maximum Marks.

Data Collection

UE data from institutions to be verified on a random sampling basis, but preferably directly from the University examination sections, if possible.

3.b. Combined Performance in Public Examinations (PE) – 50 Marks

Assessment in respect of public examinations will be based on cumulative percentile of students (as a fraction of the number appearing) qualifying in public examinations (such as UPSC, State PSCs, SSC, Government, GATE, NET, CAT, etc.) from an institution, out of the cumulative number of successful students in that year. An effort should be made to connect with examination conducting agencies to prepare institute wise data.

Here,

PE = Public Examinations = 50 Marks

For Public Examinations, we first calculate the percentile parameter **p** as follows:

Let , $\mathbf{f_i}$ be the fraction of successful students from a given institution (ratio of the number of successful and the number of appearing) for examination **i**.

$\mathbf{f_i}$ = 0, when either number of appearing or successful candidates is nil.
Let, $\mathbf{t_i}$ be the toughness parameter of examination **i**.

Then,

$\mathbf{p}$ = **Fraction percentile of** $\mathbf{\Sigma((1 - t_i)\, f_i}$ **,**

Where,
(Number of successful candidates in examination i)

t_i = (Number of candidates appearing in examination i)

Cumulative data is thus weighted across different examinations according to their toughness index, which is measured by the ratio of successful candidates to the total number appearing.

PE = 50 × Cumulative percentile of students from the institution in the cumulative data of Public Examination

Data Collection

PE data from Public Service Commissions and Examining bodies.

4

Outreach and Inclusivity (OI) – 100 Marks

Outreach and Inclusivity (OI) – 100 Marks

Ranking Weight: 0.15

Overall Assessment Metric:

OI = (CES +RD+ WS +ESCS + PCS)

4.a. Outreach Footprint (Continuing Education, Services) (CES) – 25 Marks

Information to be sought from institutions regarding:

- ☞ Names and number of CEP courses organized with number of participants.
- ☞ Teacher training and related outreach activities.
- ☞ Participation in e-content development programs such ase-PG Pathshala, MOOCs or related activities, etc.
- ☞ Interactions with industry.
- ☞ Facilitation of faculty in quality improvement.
- ☞ Any other activities falling in this category.

Assessment Metric for outreach footprint is as follows:

CES = (25 × Percentile parameter based on N)

Here,

N: Number of participation certificates issued per year (averaged over previous three (3) years) to teachers/ industry personnel, etc. for outreach programs of six (6) days or more. Percentile parameter calculated separately for each category of institutions.

4.b. Per cent Students from other States/Countries - Regional Diversity (RD) – 25 Marks

Assessment Metric:

RD = (18 × Percentile fraction of total students admitted (averaged over past 3 years) from other states + 7 × Percentile fraction of students admitted (averaged over past 3 years) from other countries)

4.c. Percentage of Women Students and Faculty (WS) – 20 Marks

$WS = 8 \times (N_1/50) + 8 \times (N_2/20) + 4 \times (N_3/2)$

Here,

N_1 and **N_2** are the percentage of Women Students and faculty respectively. **N_3** is the number of women members of eminence as Institute Head or on the Governing Board of college being ranked.

Benchmarks

50% women students and 20% women faculty and 2 women as Institute Head or in the Governing Board expected to score maximum marks.

4.d. Percentage of Economically and Socially Disadvantaged Students (ESDS) – 20 Marks

ESCS =20× (N/50)

Here,

N is the percentage of economically and socially disadvantaged Students averaged over the previous 3 years.

Benchmark

50% economically and socially disadvantaged students should be admitted to score maximum marks.

4.e. Facilities for Differently Abled Persons (PCS) – 10 Marks

PDS = 10 Marks

The marks for facilities provided to Differently Abled Persons are as follows:

Ramps	:	2 Marks
Lifts	:	2 Marks
Walking aids	:	2 Marks
Disabled friendly toilets	:	1.5 Marks
Braille / Special Labs	:	1 Mark
Audio Visual Aids including software	:	1.5 Marks

5

Perception (PR) – 100 Marks

Perception (PR) – 100 Marks

Ranking Weight: 0.1

Overall Assessment Metric: P = (PR+SR)

5.a. Process for Peer Rating in Category (PR) – 50 Marks

Peer rating is to be done through a survey conducted over a large category of academics, institution heads, HR head of employers, members of funding agencies in Government, Private sector, NGOs, etc. A comprehensive list may be compiled and circulated periodically to the concerned stakeholders. An online survey may be carried out in a time-bound fashion through NIRF web site.

5.b. Application to Seat Ratio – 50 Marks

Application to Seat Ratio will be based on the ratio of number of students applying for a course and total sanctioned / approved intake considering all UG & PG programs. Data will be obtained from the universities or the concerned colleges.

Assessment metric will be the same for University and Colleges and will be calculated individually for each category.

SR=50× (R/R*)

Here,

R = A/S

R* is the maximum value of R in the considered set of institutions.

S: Total number of sanctioned/approved intake of the institution considering all UG and PG Programs.

A: Total number of applications received in the institution considering all UG and PG Programs.