RESULTS-FRAMEWORK DOCUMENT (RFD)

FOR RESPONSIBILITY CENTRES (RCs)

April 1, 2011 – March 31, 2012

INDIAN INSTITUTE OF SCIENCE EDUCATION & RESEARCH (IISER) KOLKATA
Mohanpur Campus, P.O.: BCKV Campus Main Office, Mohanpur – 741 252
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Vision
To promote high quality undergraduate and postgraduate science education in India with special emphasis on integration of the same with high standard research in multidisciplinary fields.

Mission
1. To attract students with good potential for pursuing a research career in basic science in future.
2. To impart quality science education to these students in a research environment, ultimately leading to a master's degree.
3. To build excellent facilities for experimental and theoretical research by establishing good quality laboratories and supporting infrastructure (workshop, computation centre, library etc.).
4. To hire faculty with impeccable academic record and proven excellence in teaching and research and to provide them support for continued development.
5. To attract students for doctoral research and encourage them to conduct high quality work.
6. To establish a campus with conducive academic environment and comfortable living conditions to promote successful academic pursuit.
7. To actively forge strong relationships with existing national laboratories, institutions, universities and colleges.

Objectives (coupled to the mission)
1. Establish criteria for admission to the undergraduate program
   a. Entrants from national competitive exams e.g. KVPY, IIT-JEE.
   b. From state and central boards on the basis of admission test conducted by the IISERs.
2. Monitoring semester wise result and take actions e.g. set up tutorial classes to improve results and aid the backward sections.
3. Promote research related activity of the undergraduate students by associating them in projects and also encouraging them to be involved in research work at other labs in summer time.
4. Procurement of good research equipment, computers and setting up of library and mechanical workshop.
5. Recruitment of good faculty and monitor their academic performance by looking at their teaching output, research publications, number of Ph.D. students and attendance in conferences, delivering seminars and academic work at other institutes.
6. Recruit Ph.D. students from nationally competitive exams, encourage them in doing good work after some preliminary course work and to attend conferences and publish in reputed journals.
7. Also run an integrated Ph.D. program with input from various colleges so that the base of doing good research may be formed at the IISER itself.

8. Setting up a good campus with adequate lecture complex, research labs, class rooms, library, computation centre, central instruments facilities and accommodation for the faculty and staff with provision of basic medical facilities etc.

Actions and setting up of success indicators in attaining targets:

1) Total number of students admitted in a year (with a break up from various streams and various boards).
2) Summary of results.
3) Details of students doing research project in the year.
4) External summer project students trained in a year.
4) Total cost of major equipment procured in the year (computers and library books/journals included)
 5) Number of faculty recruited in the year, research publications, seminars given, conferences attended, foreign or other national institutions visited.
6) Recognitions won (awards, committee membership, fellowships etc)
7) Number of Ph.D. students admitted in the year.
8) Number of Integrated Ph.D. program students admitted in the year.

Action report on campus development and academic goverance:

1) No of meetings of the statutory committee as per minimum requirements per year
2) % of funds utilized
3) Budgetary expenditure
4) % of area constructed to the total area to be constructed
5) Administrative staff strength
6) Ratio of staff trained to total number of staff in a year

Section -2 (Table 1)

Inter se priorities among key objectives, success indicators and targets

Objective	Wt (%)	Actions	Success indicator	Unit	Weight (%)	Target/Criteria Value				
						Excellent 100%	Very Good 90%	Good 80%	Fair 70%	Poor 60%
Good undergraduate teaching and research	20	Get students from KVPY, IIT-JEE & top students from Boards	Admit 100 students every year from all three categories	%	20	100	90	80	70	60
		Hold regular theory classes, Labs, tutorials and tests	% of students scoring B+ and above.		30	80%	70%	60%	50%	40%
			% of students failing		20	2%	4%	6%	8%	10%
		Encourage students to do research work	% of total students engaged in research projects by end of 3rd Yr.		20	80%	70%	60%	50%	40%
		External summer project students trained	At least 90 students are provided summer research training every year		10	90	81	72	63	54
Build good academic infra-structure	20	Purchase of major research equipment, computers and consumables	Total amount of funds spent in a year	%	80	25cr	20cr	15cr	10cr	5cr
		Purchase large Number of Library books and Journals	Total amount of funds spent for library		20	4.5cr	4.0cr	3.5cr	3.0cr	2.5cr
Establish highly qualified teaching and research staff	20	Hire good faculty	Faculty strength (total number of faculty members in the institute)	%	20	>90	75	60	50	40
		Encourage them to do good research	Ratio of research papers published to the number of faculty members in a year		50	2.5	2.0	1.5	1	0.5

Goal	Wt	Objective	Indicator	Unit	Wt					
		Encourage them to have national/international linkages	Ratio of number of presentations at seminars/ conferences by faculty members to the number of faculty members in a year.		20	2.0	1.6	1.2	0.8	0.4
		Encourage excellence in academic pursuits	Total number of awards/ recognitions enjoyed by faculty members		10	15	12	09	06	03
Good research programs	20	Number of post graduate research students trained	Ratio of PG students to the number of faculty members	%	50	2.0	1.6	1.2	0.8	0.4
		Establish integrated Ph.D. program	20 students admitted to the PBIP program every year		50	20	16	12	8	4
Good Academic Governance	20	Monitoring and evaluation	No of meetings of the statutory committee as per minimum requirements per year	%	20	8	6	4	2	1
			% of funds utilized		20	100	90	80	70	60
		Campus development	Budgetary expenditure		20	40cr	36cr	32cr	28cr	24cr
			% of area constructed to the total area to be constructed		10	75%	50%	30%	20%	10%
		Capacity building	Administrative staff strength		20	66	55	45	35	20
			Ratio of staff trained to total number of staff in a year		10	10%	8%	6%	4%	2%

Section – 3 Trends (Table 2)

Objective	Actions	Success indicator	Unit	Actual Value for FY 09/10	Actual Value for FY 10/11	Target Value for FY 11/12	Projected Value for FY 12/13	Projected Value for FY 13/14
Good undergraduate teaching and research	Get students from KVPY, IIT-JEE & top students from Boards	Admit 100 students every year from all three categories	%	99	96	100	100	100
		KVPY / IITJEE / Boards		26 / 73 / 0	10 / 13 / 73			
	Hold regular theory classes, Labs, tutorials and tests	% of students scoring B+ and above.		75%	74%	78%	78%	78%
		% of students failing		2%	3%	2%	2%	2%
	Encourage students to do research work	% of total students engaged in research projects by end of 3rd Yr.		80%	80%	80%	80%	80%
	External summer project students trained	At least 90 students are provided summer research training every year		72	69	100	100	100
Build good academic infra-structure	Purchase of major research equipment, computers and consumables	Total amount of funds spent in a year	%	~21.86 cr	~17.16 cr	20cr	25cr	30cr
	Purchase large Number of Library books and Journals	Total amount of funds spent for library		~4.772 cr	~3.897 cr	3.5cr	2.5cr	2cr
Establish highly qualified teaching and research staff	Hire good faculty	Faculty strength (total number of faculty members in the institute)	%	66	90	100	110	120
	Encourage them to do good research	Ratio of research papers published to the number of faculty members in a year		2	2.8	2.5	2.5	2.5

	Encourage them to have national/international linkages	Ratio of number of presentations at seminars/ conferences by faculty members to the number of faculty members in a year.		1.3	1.8	2.0	3.0	3.5
	Encourage excellence in academic pursuits	Total number of awards/ recognitions enjoyed by faculty members		10	15	15	20	25
Good research programs	Number of post graduate research students trained	Ratio of PG students to the number of faculty members	%	1.3	1.2	1.5	2.0	2.5
	Establish integrated Ph.D. program	20 students admitted to the PBIP program every year		10	12	15	20	20
Good Academic Governance	Monitoring and evaluation	No of meetings of the statutory committee as per minimum requirements per year	%	Min req=7 conducted 19	Min req=11 conducted 20	20	20	20
		% of funds utilized		98%	80%	85%	90%	95%
	Campus development	Budgetary expenditure		35%	40%	45%	50%	50%
		% of area constructed to the total area to be constructed		19%	20%	25%	60%	70%
	Capacity building	Administrative staff strength		29	32	36	45	66
		Ratio of staff trained to total number of staff in a year		0.06:1	0.18:1	0.2:1	0.2:1	0.2:1

Section – 4

Description and Definition of Success indicators and proposed measurement methodology. Also give the rationale for choosing this.

Success indicators:

1) Objective – Good undergraduate teaching & Research

Success indicator i) Admit 100 students in the 5 Yr integrated BS-MS program of which 25% should be from KVPY, 25% from IIT-JEE and remaining 50% from state and central boards on the basis of an entrance examination conducted by IISER's.

Measurement technique – Count the total no. of students admitted in the program for the academic year and also the number of students from each of the streams indicated.

Rationale- The KVPY and IIT-JEE are national examinations and those who qualify in these are considered to be the cream of the student community. Thus selecting them for the IISER, adds to the overall standard of the student intake. Those taken from the boards are also from the very top in each board, satisfying certain specified marks criteria and the entrance examination allows us to compare the standard of the students across the boards. Good quality students help the IISERs to fulfill their major goal of creating a well trained scientific community.

Success indicator ii) % of students scoring more than 70% (B+) in the overall yearly grade and the % of failures in a year (i.e. they get lower than 40% grade (F) in the yearly assessment .

Measurement technique – For each semester, the students are graded in each course that they take,   for their home work, class tests, mid semester test and end-semester test. The overall grade(G_i) in a 10 point scale , awarded by the teacher(s) at the end of the semester is weighted by the credit rating of the course (C_i) and a semester grade point average (SGPA) is computed according to the formula $SGPA = \Sigma(C_i.G_i)/\Sigma C_i$. An SGPA of 7 or above is a B+ grade.

Rationale- The performance of students is to be monitored in each semester so that their progress can be measured. The grade point obtained in courses is a good indicator of how the student is performing. The number of failures is monitored so that proper help can be provided to disadvantaged students.

Success indicator iii) 80% of students should be involved in research work at the end of third year.

Measurement Technique – Count the number of students getting involved in research in the summer throughout the first three years and obtain percentage of such students

Rationale – Involvement with research increases the academic horizon of the student and makes him familiar with the environment of science in the country. This activity allows students to be intimately connected with research from the very first year, thus providing opportunity for obtaining education in a research environment.

Success indicator iv) Large number of students from other institutions should be involved in summer research project at the IISER-K.

Measurement Technique – Count the number of students coming to IISER for research in the summer and obtain percentage of such students to available faculty.

Rationale- Number of students coming from outside to do research project is an indicator of the quality of faculty and availability of good labs and infrastructure.

2) Objective – Build good academic infra-structure

Success indicator i) Purchase of major research equipment, computers and consumables

Measurement technique – Count the total amount of funds spent in purchasing research equipments, computers and consumables.

Rationale- Total amount of funds spent for research equipments is an indicator of the research facilities/laboratories which are established in IISER-K for high quality research work to be carried out by faculty members. Setting up of computational facilities is an indicator of the infrastructure development in IISER-K.

Success indicator ii) Purchase large Number of Library books and Journals

Measurement technique – Count the total amount of funds spent in purchasing Books, Journals and educational resources.

Rationale- A well equipped library forms the core to high quality infrastructure required to excel in teaching and research.

3) Objective – Establish highly qualified teaching and research staff

Success indicator i) Hire good faculty

Measurement technique – Count the total number of faculty members employed in the institute in a year.

Rationale- A large number of well trained faculty members are necessary to impart higher education and do research.

Success indicator ii) Encourage them to do good research

Measurement technique – Count the ratio of the total number of research publications to the number of faculty members employed in a year.

Rationale- High quality research performed by the faculty members is judged by their research output in terms of the number of publications each year. A ratio provides a measure of the average performance of every faculty member.

Success indicator iii) Encourage them to have national/international linkages

Measurement technique – Count the ratio of presentations given by faculty members in international/national seminars, conferences, and workshops to the total number of faculty members employed in a year.

Rationale- The visibility of the institute, research performance and collaborative efforts of faculty members can be judged by the interaction of the faculty member with the rest of the scientific community through seminars/presentations in conferences and workshops nationally and internationally.

Success indicator iv) Encourage excellence in academic pursuits

Measurement technique – Count the total number of awards and distinctions won by the faculty members in a year.

Rationale- Recognition of the faculty members, and the institution they belong to, is marked by the number of awards and distinctions won by them.

4) Objective – Good research programs

Success indicator i) Number of post graduate research students trained

Measurement technique — Count the total no. of post graduate students admitted in the program for the academic year.

Rationale- The credibility of the research program of IISER-K is established through attracting large number of PhD students every year. Good quality students help the IISERs to fulfill their major goal of creating a well trained scientific community.

Success indicator ii) Establish integrated Ph.D. program

Measurement technique – Count the total no. of integrated Ph.D. students admitted in the program for the academic year.

Rationale- The integrated Ph.D. program provides research training to students with undergraduate degrees from other institutions/universities. Attracting such students to do integrated Ph.D. at IISER-K establishes the potential of IISERs as a good

research institute in the country. Good quality students help the IISERs to fulfill their major goal of creating a well trained scientific community.

5) Objective – Good Academic Governance

<u>Success indicator</u> i) Monitoring and evaluation

Measurement technique –Count the actual number of statutory committee meetings held and % of fund utilized

Rationale-It shows the regularity of monitoring and evaluation by the governing bodies and pace of development works/spending.

<u>Success indicator</u> ii) Campus development

Measurement technique – Area constructed/developed and fund utilized for the purpose

Rationale-It takes into account the physical capacity building and facilities created in a given period of time.

<u>Success indicator</u> iii) Capacity building

Measurement technique –Count staff strength and trainings provided to staff members

Rationale-Manpower and quality control/development factors can be assured

Section -5

Specific performance requirement from other agencies that are critical for delivering agreed results

Sl. No.	Other Organization/ agency(ies)	Job(s) depending on the other organization/ agency	Deadline for completion	% of work completed		% projected to be completed		
				2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
1.	CPWD	Building of Hostels for students	March 2011	25	65	80	90	100
2.	CPWD	Building of Laboratory Complex	December 2011	0	15	40	45	50
3.	CPWD	Building of Lecture Theatre	December 2011	0	5	40	45	50

Section 6 (Table 3)

Outcome/Impact of activities of the organization

IISER Kolkata is committed to building a community of researchers including students and faculty members. Our mandate will be to ensure that at least 50% of our students go forward to do scientific research.

Sl No.	Outcome/Impact of organization/ RCs	Jointly responsible for influencing this outcome / impact with the following organization(s) / departments/ ministry(ies)	Success Indicators	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
1.	> 50% students go forward to do scientific research			Nil*	Nil*			

* Our first batch of students will graduate in July 2011.