

④ NATIONAL YOUTH SERVICE  
ENGINEERING INSTITUTE



**NATIONAL YOUTH SERVICE ENGINEERING INSTITUTE**

**PRINCIPAL'S REPORT**

**JULY 1992 - NOVEMBER 1993**



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## **BACKGROUND HISTORY**

NYS Engineering Institute is a joint venture project between the Kenyan and Japanese Governments. The idea was conceived way back in 1984 to mark the twenty years' of Kenya's independence and the good friendly relationship which has been existing between the two Governments.

National Youth Service commenced on 1<sup>st</sup> September 1964, that was immediately Kenya attained her independence. The main objective was to have young men and women volunteering themselves to serve the young nation in various tasks of Nation Building.

The Government took part of its tasks to establish training institutions, where the volunteers would train to improve their knowledge and skills. The training also served as incentive to young people and it also prepares them to go out of the Service with confidence and ready to earn their daily living in the competitive world.

By 1984, the National Youth Service had (13) Thirteen Training Institutions, offering various courses at Artisan and Craft Levels. The next higher level of training was missing, that is, Technician and Diploma Levels. The establishment of NYS Engineering Institute was going to fill up this gap.

When commenced, the NYS Engineering Institute would offer training to young men and women to the level of Technician Part III Certificate and Diploma Certificate in the fields of Electrical Engineering, Motor Vehicle Engineering, Construction Plant Engineering, Electronics Engineering and Mechanical Engineering.

The feasibility study was conducted in 1984, this was followed by the despatch of two basic Design Study Mission from Japan; one in February 1985 and the second in August 1985. Other Consultations Missions were later despatched in accordance with J.I.C.A. Grant Aid Programme.

The main construction work was started in July 1986 and the building plus training facilities were handed over to the Kenya Government on 15<sup>th</sup> August 1988.

This was followed by the formal opening of the NYS Engineering Institute by His Excellency The President of The Republic of Kenya, Hon. Daniel Toroitich Arap Moi on 8<sup>th</sup> December 1988.

On the other hand, discussions on Technical Co-operation of the Project were held and Records of Discussions were signed by the representatives of both Governments on 14<sup>th</sup> April 1987 and according to its contents which became effective on 1<sup>st</sup> January 1988, the Japanese Government was to assist in despatching of experts, training of counterpart personnel and the supply of any necessary equipment.

The purpose of the Project is to provide advanced skilled training to the students who are selected among the National Youth Service servicemen and servicewomen who meet the entry qualifications. The co-operation thus contributes to the social, economical and industrial development of Kenya.



The period for the Agreement was to last for (5) Five years and to end in December 1992. However, it was noted that some of the objectives were not fully accomplished. As such, the Japanese Evaluation Team and the Kenyan Officials recommended to their respective Governments for a two years' extension of the Co-operation Period. The two years' extended Co-operation Period was from January 1993 to December 1994.

**Students' Enrolment:**

The first group of students was admitted in the Institute on 14<sup>th</sup> August 1989. This consisted of 94 students who were distributed as follows:-

(1)	Electrical Engineering	-	19
(2)	Radio, T.V. & Electronics	-	19
(3)	Mechanical Engineering	-	19
(4)	Motor Vehicle Engineering	-	19
(5)	Construction Plant Engineering	-	18
	<b>Total:</b>	-	<b>94</b>

Out of the 94 students, 2 (Two) discontinued before sitting for Technician Part I exams.

The second intake joined the Institute on 6<sup>th</sup> December 1990; and consisted of 91 students who were distributed as follows:-

(1)	Electrical Engineering	-	20
(2)	Radio, T.V. & Electronics	-	20
(3)	Mechanical Engineering	-	18
(4)	Motor Vehicle Engineering	-	17
(5)	Construction Plant Engineering	-	16
	<b>Total:</b>	-	<b>91</b>

Out of 91 students, one discontinued before completing Part I course; and only 90 students challenged Part I exams.

The third intake joined the Institute on 23<sup>rd</sup> October 1991 and consisted of 85 students, who were distributed as follows:-

(1)	Electrical Engineering	-	20
(2)	Radio, T.V. & Electronics	-	16
(3)	Mechanical Engineering	-	17
(4)	Motor Vehicle Engineering	-	15
(5)	Construction Plant Engineering	-	17
	<b>Total:</b>	-	<b>85</b>

Out of the 85 students, eight discontinued before completing Part I course; and only 77 students challenged Part I exams.

The fourth intake joined the Institute on 9<sup>th</sup> November 1992, and consisted of 25 students. These 25 students were distributed into two Departments:-

(1)	Radio, T.V. & Electronics	-	7
(2)	Mechanical Engineering	-	18
	<b>Total:</b>	-	<b>25</b>

Out of the 25 students, two were discontinued before completing Part I course, and only 23 students challenged Part I exams.

The fifth intake joined the Institute on 30<sup>th</sup> August 1993, and consists of 110 students. They are distributed as follows:-

(1)	Electrical Engineering	-	22
(2)	Radio, T.V. & Electronics	-	22
(3)	Mechanical Engineering	-	22
(4)	Motor Vehicle Engineering	-	23
(5)	Construction Plant Engineering	-	21
	<b>Total:</b>	-	<b>110</b>

Thus the total number of students who have been admitted in the Institute so far is 405. However, not all the 405 are currently in the Institute. Some have left due to either completing the course or failing the National Exams at various levels, while others have discontinued on their own or on disciplinary matters.

Course	Year of Intake				Total
	'90	'91	'92	'93	
Electrical	11	18	0	22	51
Radio, T.V. & Electronics	19	15	5	22	61
Mechanical	13	9	18	22	62
Motor Vehicle	10	13	0	23	46
Construction Plant	6	14	0	21	41
<b>Total:</b>	<b>59</b>	<b>69</b>	<b>23</b>	<b>110</b>	<b>261</b>

**Training Progress:**

The Institute has been conducting Technician Programmes which is a three years' course, leading to Technician Part III Certificate.

The students have to sit for the Kenya National Examinations Council's Exams at the end of every Academic Year.

Currently, the Institute has had five intakes and their Training Progress is as follows:-

(a) **'89 intake:**

Date of Admission:	-	14 <sup>th</sup> August 1989
Initial Number:	-	94 students

*Out of 94 initial number, 92 students sat for the Part I K.N.E.C. Exams in June 1990. Their performance was as show on Page 9.*

Department						
Performance	EI	EE	ME	MV	CP	Total
Credit	5	6	14	2	2	29
Pass	6	9	5	10	11	41
Referred	6	2	0	3	5	16
Fail - (Part I)	1	2	0	3	0	6
Deserted	1	0	0	1	0	2
<b>Total:</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>18</b>	<b>94</b>

Total % Pass 70/92 = 76%

Those who had either failed or were referred could not continue with the Part II training before passing Part I Exams.

Thus only 86 students joined classes for Part II from January to November 1991 and their performance is as shown on Page 10.

Department Performance	EI	EE	ME	MV	CP	Total
Credit	2	1	2	5	0	10
Pass	3	5	12	6	7	33
Referred	7	8	2	0	5	22
Fail - (Part II)	4	3	3	2	5	17
Deserted	1	0	0	2	1	4
<b>Total:</b>	<b>17</b>	<b>17</b>	<b>19</b>	<b>15</b>	<b>18</b>	<b>86</b>

Total % Pass 43/82 = 52%

Out of the above 86 students, only 43 qualified to join Part II class in May 1992 to November 1992. The 43 students sat for Part III National Exams in November 1992, where their performance is as shown on Page 11.

Department Performance	EI	EE	ME	MV	CP	Total
Credit	1	0	0	3	4	8
Pass	4	6	10	7	3	30
Referred	0	0	4	1	0	5
Fail	0	0	0	0	0	0
Deserted	0	0	0	0	0	0
<b>Total:</b>	<b>5</b>	<b>6</b>	<b>14</b>	<b>11</b>	<b>7</b>	<b>43</b>

**Total % Pass 38/43 = 88%**

(b) '90 Intake:

Date of Admission: 6<sup>th</sup> December 1990  
 Initial Number: 91 students

This group was intended to undergo Diploma Programme but due to the delay in releasing the syllabus, the course was reverted to Technician Course.

The '90 Group sat for Technician Part I Exams in July 1992 and the performance was as shown below:-

Department Performance	EI	EE	ME	MV	CP	Total
Distinction	0	1	0	0	0	1
Credit	5	11	6	3	0	25
Pass	7	7	4	8	5	31
Referred	7	1	7	5	10	30
Fail	1	0	0	1	1	3
Deserted	0	0	1	0	0	1
<b>Total:</b>	<b>20</b>	<b>20</b>	<b>18</b>	<b>17</b>	<b>16</b>	<b>91</b>

Total % Pass 57/90 = 63%

The referred students could not join the Part II class which started in January 1993. Thus out of 91 students, only 57 joined the Part II class. The students sat for their Part II National Exams in July and November 1993 respectively. The results are not out yet.



(c) **'91 Intake:**

Date of Admission: - 23<sup>rd</sup> October 1991  
Initial Number: - 80 students

The students sat for their Technician Part I Exams in June 1993 and the results are not yet out; apart from the Mechanical students who sat for the Part I Exams in November 1992.

The performance of the Part I for the Mechanical students was as shown below:-

Department Performance	ME	Total
Credit	6	6
Pass	4	4
Referred	7	7
Deserted	0	0
<b>Total:</b>	<b>17</b>	<b>17</b>

Total % Pass = 59%

Out of the 10 students who qualified to join Part II class, only 9 joined as one student deserted after Part I exams.

The 9 students sat for their Part II exams in November 1993 and the results are not yet out.

(d) '92 Intake:

Date of Admission:	-	9 <sup>th</sup> November 1992
Initial Number:	-	25 students

This group sat for their Part I exams in July 1993 and have been on Industrial Attachment since then. The group is expected to join Part II class in January 1994. Two of the initial 25 have deserted the course and only 23 are remaining.

(e) '93 Intake:

Date of Admission:	-	30 <sup>th</sup> August 1993
Initial Number:	-	110 students

This intake is currently on their Part I class and are expected to sit for their Part I exams in July 1994.

Normally, the students go for Industrial Attachment after their exams before embarking on the next level of training. The Industrial Attachment exposes the students to actual practical environment where they use the Technical Knowledge gained at the Institute and also makes the students understand the working environment as they train.

### Graduates' Employment:

The Institute has so far graduated only one Group of 43 students. The group was admitted on 14<sup>th</sup> August 1989 and graduated in December 1992.

Out of the 43 graduated, 24 have been employed and 4 students have joined other Training Institutions for further development of the career acquired at the Institute. Therefore, those who have been placed so far accounts to about 65% which, considering the prevailing economic situation in the country, is encouraging.

All the same, it is felt that more campaign should be done to have the graduands of the Institute absorbed in the Labour Market. The Institute, in conjunction with NYS Headquarters, are exploring ways of promoting employment opportunities for the graduands. The placement breakdown for graduands employment is as shown on Page 16.

**Graduands' Employment Breakdown:**

<b>(No.)</b>	<b>Name of Company:</b>	<b>EI</b>	<b>EE</b>	<b>ME</b>	<b>MV</b>	<b>CP</b>	<b>Total:</b>
(1)	Automotive Battery Manfs. Co.	0	0	3	0	0	3
(2)	Freespan	3	1	0	0	0	4
(3)	Kenya Nut	0	0	1	1	0	2
(4)	Marshalls	0	0	0	2	0	2
(5)	K.T.T.C.	0	0	1	0	1	2
(6)	Kibera C.F.K.	0	0	0	1	0	1
(7)	Kisumu Design & Contractors	0	0	1	0	0	1
(8)	E. A. Packaging	0	0	1	0	0	1
(9)	Colgate Palmolive	0	0	1	0	0	1
(10)	Ryce Motors	0	0	0	1	0	1
(11)	Ganatra Limited	0	0	0	0	1	1
(12)	Private Crafts School (Lecturer)	0	0	0	0	1	1
(13)	Jacaranda Hotel	1	0	0	0	0	1
(14)	Ruiru Rolling Mills	1	0	0	0	0	1
(15)	Kenya Pipeline	0	2	0	0	0	2
(16)	Securicor	0	2	0	0	0	2
(17)	Kenya Polytechnic	0	1	0	0	0	1
(18)	Mombasa Polytechnic	0	0	0	0	1	1
<b>Total:</b>		<b>5</b>	<b>6</b>	<b>8</b>	<b>5</b>	<b>4</b>	<b>28</b>

### Staff Establishment:

The Staff Establishment was approved on 7<sup>th</sup> December 1988 and was to be established in Three stages; (i.e.), 1988/89, 1989/90 and 1990/91.

The filling up of the general cadre staff posts was quite easy and all the general cadre posts are filled.

There is a general shortage of staff in the Technical Fields throughout the country. Institutions like Universities, Polytechnics and Colleges of Technologies are experiencing this problem. NYS Engineering Institute is no exception. All the same, continued efforts to recruit enough qualified staff have resulted in most of the Teaching Posts being filled. Presently, only five posts remain vacant; (i.e.), one post of Deputy Principal, one post of Senior Lecturer/Head of Department and three posts of Workshop Technicians.

NYS Headquarters is in the process of preparing Indents for these posts and are expected to be advertised in the Local Dailies soon.

It is worth noting that the need for some Training Posts which are not reflected in the Establishment have been realised; and in order to cope with this problem, the Director, National Youth Service has re-allocated seven posts from other Units to be utilised.

The Table on page 18 shows Staff Distribution in comparison to the Establishment.

**Staff Distribution in Comparison to Staff Establishment:**

<u>Post:</u>	<u>Grade:</u>	<u>Approved:</u>	<u>Filled:</u>	<u>Vacant:</u>
Principal	"N"	1	1	0
Deputy Principal	"M"	1	0	1
Dean	"M"	1	0	1
Senior Commandant	"L"	0	1	-1
Senior Lecturer	"L"	5	4	1
Lecturer	"K"	15	16	-1
Commandant	"K"	0	1	-1
Assistant Lecturer	"J"	15	15	0
Accountant II	"J"	1	1	0
Senior Training Officer	"J"	0	1	-1
Cateress	"J"	0	1	-1
Executive Assistant	"H"	1	1	0
Workshop Technician	"H"	5	2	3
Supplies Officer	"H"	1	1	0
Training Officer	"H"	0	1	-1
Technical Instructor II	"H"	0	1	-1
Shorthand Typist	"H"	1	1	0
Instructor	"G"	3	3	0
Electrical Inspector	"G"	0	1	-1
Section Commander	"G"	0	3	-3
Assistant House Keeper	"G"	2	2	0
Telephone Operator I	"F"	1	1	0
Copy Typist I	"F"	1	1	0
Artisan	"F"	0	4	-4
Cook Grade I	"F"	2	2	0
Section Officer	"F"	0	7	-7
Driver	"F"	7	7	0
Storeman	"F"	2	7	-5
Higher Clerical Officer	"F"	0	2	-2
Telephone Operator II	"E"	1	1	0
Copy Typist III	"E"	2	2	0
Clerical Officer	"E"	0	8	-8
Cook Grade II	"E"	1	1	0
Cook Grade III	"D"	5	5	0
Assistant Cook	"C"	1	1	0
Subordinate Staff	"(B/D)"	7	10	-3

**Budget:**

In this Financial Year 1993/94, the Institute was allocated Kenya Pounds 631,059 - 18.6% increment as compared to 1992/93 allocation of Kenya Pounds 531,735. This is a very good gesture of the Government of Kenya's commitment to the Institute; When one considers that in other Units, there has been a general decrease by about 10% in Budgetary Allocations due to the country's financial situation.

Also, one new item of "Field Attachment" was introduced in order to strengthen the practical training of the students.

The breakdown of this year's Budget is shown on the Table on Page 20. Also attached is the actual Expenditure of the Institute as at end of October 1993.

## OFFICE OF THE PRESIDENT

		RECURRENT EXPENDITURE ESTIMATES 1993/94		
HEAD	ITEM	TITLE	APPROVED ESTIMATES 1992/93	ESTIMATES 1993/94
016		016: NYS ENGINEERING INSTITUTE - RUARAKA		
	000	Personal Emoluments	175,015	231,970
	050	House Allowance	43,510	104,448
	060	Other Personal Allowances	1,822	1,895
	064	Transfer Allowance	300	450
	080	Passage and Leave Expenses	6,344	7,100
	100	Transport Operating Expenses	18,826	5,950
	110	Travelling and Accommodation Expenses	4,032	3,485
	120	Postal and Telegrams Expenses	479	595
	121	Telephone Expenses	8,700	7,650
	140	Electricity, Water and Conservancy	37,158	33,150
	160	Purchase of Food and Rations	69,691	55,250
	172	Purchase of Uniforms and Clothing	3,532	4,250
	173	Library Expenses	45,315	40,800
	174	Purchase of Stationery	15,845	19,550
	175	Advertising and Publicity	3,532	2,550
	190	Miscellaneous Other Charges	1,813	1,700
	194	Training Expenses	49,846	43,350
	195	Trade Test Fee and Training Levy	24,470	39,631
	196	Field Attachment		4,250
	198	Compensation and Ex-Gratia Payments	544	510
	220	Purchase of Plant and Equipment	14,032	16,150
	250	Maintenance of Plant, Machinery and Equipment	3,397	2,040
	260	Maintenance of Building and Stations	3,532	4,335
		NET EXPENDITURE HEAD 016 = KENYA POUNDS	531,735	631,050



EXPENDITURE AS OF 29 OCTOBER 1993

HEAD	SUB HEAD	ITEM	AMOUNT ALLOCATED	EXPENDITURE TO PREVIOUS MONTH	EXPENDITURE FOR THE MONTH	TO DATE	TOTAL EXPENDITURE	COMMITMENTS	PLUS COMMITMENTS	UNCOMMITTED BALANCE
016	112	101-4	90,000.00				89,778.00	NIL	89,778.00	222.00
357	000	196-1	325,000.00		41,848.00		323,593.00	NIL	323,593.00	1,407.00
016	112	111-1	20,000.00				10,530.00	1,170.00	11,700.00	8,300.00
016	112	120-0	5,940.00				NIL	1,340.00	1,340.00	4,600.00
016	112	141-3	230,000.00				225,921.80	NIL	225,921.80	4,078.20
016	112	142-1	100,000.00				NIL	NIL	NIL	100,000.00
016	112	143-X	1,500.00				1,500.00	NIL	1,500.00	NIL
016	112	160-X	1,105,000.00		103,766.60		972,221.15	115,242.00	1,087,463.15	17,536.85
016	112	174-X	195,500.00		920.00		144,958.00	45,398.00	190,356.00	5,144.00
016	112	175-8	25,500.00				NIL	NIL	NIL	25,500.00
016	112	190-1	17,000.00		2,671.80		8,019.80	3,040.00	11,059.80	5,940.20
016	112	194-4	433,500.00		200.00		318,776.65	36,010.00	354,786.45	78,713.35
016	112	198-7	5,100.00				NIL	NIL	NIL	5,100.00
016	112	220-7	161,500.00				159,996.30	600.00	160,596.30	903.70
016	112	250-9	20,400.00		320.00		18,970.00	NIL	18,970.00	1,430.00
016	112	260-6	43,340.00				41,690.00	1,500.00	43,190.00	150.00
357	000	085-X	60,000.00		1,839.25		41,600.25	NIL	41,600.25	18,399.75
357	000	190-2	8,000.00		733.00		4,317.35	700.00	5,017.35	2,982.65
114	325	551-4	5,000.00				199.50	NIL	199.50	4,800.50
357	000	160-0	250,000.00				198,350.00	31,830.00	230,180.00	19,820.00
016	112	173-1	243,000.00		1,248.00		3,222.00	788.00	3,990.00	239,010.00
016	112	196-0	85,000.00		49,048.00		54,053.25	1,200.00	55,253.35	29,745.65

**BUDGET CODES AS PER EXPENDITURE LISTING:**

016-112-101-4	-	Running Expenses of Vehicles
357-000-196-1	-	Fuel for Driving School/Field Attachment
016-112-111-1	-	Travel and Accommodation (Local)
016-112-120-0	-	Postal and Telegrams
016-112-141-3	-	Electricity
016-112-142-1	-	Water
016-112-143-X	-	Conservancy
016-112-160-X	-	Food and Rations
016-112-174-X	-	Purchase of Stationery
016-112-175-8	-	Advertising and Publicity
016-112-190-1	-	Miscellaneous and Other Charges
016-112-194-4	-	Training Expenses
016-112-198-7	-	Compensation & Ex-gratia Payment
016-112-220-7	-	Purchase of Plant & Equipment
016-112-250-9	-	Maintenance of Plant, Machinery & Equipment
016-112-260-6	-	Maintenance of Building & Station
357-000-085-X	-	Servicemen's Leave Expenses
357-000-190-2	-	Miscellaneous Other Charges
114-325-551-4	-	Purchase of Sport Equipment
357-000-160-0	-	Food and Ration
016-112-173-1	-	Library Expenses
016-112-196-0	-	Field Attachment

### Future Projection:

When the Institute started training in 1989; the aims and objectives was and still is, to train and produce qualified technicians who upon successful completion of the course, would be employed in the Labour Market and in turn contribute to this country's industrial, economical and social development.

The first major task of the Project was to set up the basic function systems and programmes which would promote the achievement of the objectives.

This has been the dominant factor during the Phase I of the Kenya-Japan Co-operation Period - (1988 - 1994). Within this period, the function systems and programmes to ensure that the Kenyan personnel would be in a position to run the existing Technician Course successfully will be achieved by the end of 1994. To mention some of the functional systems:-

- (1) Recruitment of the staff and have solid establishment,
- (2) Training of staff to bring them to a level where they will be able to handle the supplied equipment,
- (3) Development and preparation of curriculum on Training Materials,
- (4) Development of Laboratory and Workshop experiments and practices and
- (5) Technical Transfer Programmes within the Institute to enable the staff be in a position to use the supplied equipment effectively.

This lays the basis for the Institute to function as a Training Ground for Technician Personnel to even higher levels than the existing one. During the first Phase, the Institute mainly concentrated in training only servicemen and servicewomen to offer the basic qualifications required by the Labour Market.

With the basic functions and programmes set in motion, the Institute should now move to Phase II where it should offer more Technical Training based on existing programmes. The Phase II programmes would be in a way be consolidating and supplementing the existing one, so that better achievements should be achieved.

The Phase II programmes would also broaden the beneficiaries of the Institute's Programmes by inviting some of the people working in the Industrial Sector to join in some of the courses, and also offering Technical Services and Consultancy to Small Scale Industries - (Jua Kali Sector).

In 1982, the Government started the implementation to change the Education System from 7-4-2-4 to the new system of 8-4-4 in the normal Academic System. The first graduates of the new system completed Secondary Education in December 1989. However, due to some technicalities, the new syllabi for Technical Education were not ready then. The process of producing the syllabi has been going on, and right now, most of the syllabi have been released and are ready for use. The Institute plans to start the new Diploma Courses by September 1994.

In the new Technical Training Programme, the Engineering Courses can be classified into four major fields:-

- A - Mechanical Engineering
- B - Electrical Engineering
- C - Civil & Building Engineering
- D - Chemical Engineering

Within each field, various options are offered streaming from the basic setup. The Institute offers the courses in Mechanical and Electrical fields, and in these two fields the options are:-

- A - Mechanical Field: -
  - (1) Production
  - (2) Plant
  - (3) Automotive
  - (4) Construction Plant Equipment
  - (5) Agricultural Engineering
  - (6) Materials, Technology and Metallurgy
  - (7) Refrigeration and Air Conditioning
  
- B - Electrical Field: -
  - (1) Electrical Power
  - (2) Electronics
  - (3) Telecommunications
  - (4) Information Technology & Computers
  - (5) Instrumentation
  - (6) Medical Engineering

Radio, T.V. & Electronics Course and Electrical Installation Course, which the Institute is offering currently, do not exist as stand alone courses within the new setup.

Looking through the new Diploma Syllabi, one will note that for the First Year of the Course, all Mechanical options cover the same contents, and as such can be treated as one basic course. This also applies to Electrical Courses. For the Second Year, the difference between options within one basic course are minimal: - about two subjects out of the seven subjects. It is only in Final Year - (Third Year) where each group specialises in any particular option. As such, adaption of more options within the main Basic Structure will not very much affect the setup function systems and programmes already in motion. The adaption of more options will also give the trainee more scopes to select areas of one's interest and be able to venture into diverse areas of the Industrial Sector. However, this will affect the Institute's setup in terms of Infrastructure, Classroom, Dormitory and Workshops.

Thus, when transiting from the current Technicians Programmes to the new Diploma Programmes, two issues have to be considered:-

(1) **Transition to New Diploma:**

The options to be adopted are chosen such that they are most closer to the already existing one; thus their demands are minimum.

These options are:-

- \* **Electrical Power**
- \* **Electronics**
- \* **Mechanical Production**
- \* **Automotive**
- \* **Construction Plant Equipment**

(2) **Future Options to be Incorporated:**

As mentioned earlier, the extra options would not be new courses, but would be branches of the already existing basic courses currently being offered. The selection is based on how the options consolidates and supplements the existing programme demands in the Labour Market, and population target to benefit from the Programme. The timing of when any extra option should be implemented should be such that it will take place when the transition of the Diploma has stabilised and the base in the particular field has been well established. The timing will also depend on availability of the extra facilities unique to the particular option.

### **Short Courses & Production Workshops:**

As mentioned earlier, one distinct characteristic of the Phase II is to increase and diversify the number of beneficiaries based on the existing Phase I developed foundation. This in turn would improve the Institute's participation in industrial, economical and social development of the country.

In this aspect, two programmes are anticipated:-

- (1) Short Skill Development Courses targeted to those who have undergone Basic Technical Training and are working in various Labour Sectors.

In this way, the Institute will also act as a centre for the Propagation of Technological Transfer and participation by industrial workers which will speed up the process.

This programme will also optimize the usage of facilities by having most of the courses mounted during the vacations and off-peak seasons; thus improving the benefit/cost ratio of the Project.

- (2) Small Business Centres/Model Production Workshops (SBC/MPW)

This would target at providing services, technical consultancy and production of tools and implements to the small-scale and medium-scale industries. The focus would be in areas which these industries find difficulties due to the nature of the equipment which may be required; and/or problems of technical know-how; and in these areas, the big established industries find the jobs and tasks irrelevant for their operations.

The SBC/MPW would also be used for Practical Industrial Training for the graduates of the Institute, such that by the time they have gone through the period of training, they will have gained sufficient experience and confidence to start their own small-scale businesses in both rural and urban centres.

The funds which may be acquired from the SBC/MPW would be used to develop and support Workshops; and it is also suggested that part of it would be banked in Revolving Funds' Account. The Revolving Funds' Account would be used in assisting the graduands start their small businesses; (i.e.), in the form of loans for equipment and machinery and initial raw materials. The loan should be repaid with some interest which should be favourable to both parties.

The SBC/MPW would also promote the teaching of Entrepreneurship Education.







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