

4. 5 Publications and Papers presented out of Research Activities

K : Kenyan staff
J : Japanese staff

	No. of Research undertaken	No. of Staff involved			No. of Publications	No. of Papers presented	No. of Research per Staff per Year
		K	J	Total			
1990/91	NIL	N/A	N/A	NIL	NIL	NIL	
1991/92	ONE (1)	1	N/A	ONE (1)	ONE (1)	0.083	
1992/93	TWO (2)	4	2	SEVEN (7)	FIVE (5)	0.176	
1993/94	THREE (3)	6	2	-	-	0.157	
1994/95							
TOTAL	3	11	4	8	6	0.107	

No. of Research per staff per year is expressed as No. of Research undertaken divided by all academic staff in a department in that particular year.
No. of Staff involved may count the same staff repeatedly.

4. 6 Participation of SEMINAR/WORKSHOP

	No. of Staff participated			No. of Papers presented	No. of Papers published out of Seminar/Workshop	No. of Papers published out of Seminar	No. of Seminar/Workshop per Staff per Year
	K	J	Total				
1990/91	0	0	0	0	0	0	0
1991/92	6	0	6	0.5	6	0.5	0.167
1992/93	36	2	38	0.32	4	0.44	0.25
1993/94	-	-	-	-	-	-	-
1994/95							
TOTAL	42	2	44	0.273	13	0.313	0.139

4. 7 Total Publications and Papers presented

	No. of Publications	No. of Papers presented	No. of Publications per Staff per Year	No. of Papers presented per Staff per Year
1990/91	0	1	0.08	0.08
1991/92	7	7	0.06	0.53
1992/93	7	7	0.433	0.433
1993/94				
1994/95				
TOTAL	14	15	0.193	0.366

No. of Publication in 4. 8 is equal to the sum of No. of Publications in 4. 5, 4. 6 and 4. 7.
 No. of Papers presented in 4. 8 is equal to the sum of No. of Papers presented in 4. 5, 4. 6 and 4. 7.
 No. of Publications per staff per year in 4. 8 is expressed as No. of Publications in 4. 8 divided by total academic staff in a department in that particular year.
 No. of Papers presented per staff per year in 4. 8 is expressed as No. of Papers presented in 4. 8 divided by total academic staff in a department in that particular year.

4. 8 Seminar/Workshop/Conference organized by Department

	No. of Seminar/Workshop organized by Department		
	Internal	Public	Total
1990/91	0	0	0
1991/92	1	0	1
1992/93	1	1	2
1993/94			
1994/95			
TOTAL	2	1	3

4. 9 Textbook/Manual printed

	No. of Staff involved		No. of Books printed	No. of books printed per Staff per year
	K	J		
1990/91	0	0	0	0
1991/92	0	0	0	0
1992/93	0	0	0	0
1993/94				
1994/95				
Total	0	0	0	0

No. of books printed per staff per year is expressed as No. of books printed divided by total academic staff in that particular year.

5. STATISTICS OF STUDENT : Planned No. of Student per Class :

	No. of Students admitted			No. of Students present			No. of Students proceeded to the following year			Grade of Graduates				No. of Graduates employed/ on the job				
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	A	B	Pass	M	F	Total
1990/91	27	4	31	27	4	31	27	4	31									
	1st																	
	2nd																	
	3rd																	
	4th																	
	5th																	
	6th																	
	TOTAL	27	4	31	27	4	31	27	4	31								
1991/92																		
	1st																	
	2nd																	
	3rd																	
	4th																	
	5th																	
	6th																	
	TOTAL																	
1992/93	25	4	29	25	2	28	25	2	28	25	3	28						
	2nd	27	4	31														
	3rd																	
	4th																	
	5th																	
	6th																	
	TOTAL	52	8	60	50	5	55	50	5	55								
1993/94	19	1	20	19	1	20	24	4	28	20	2	22						
	2nd	25	3	28														
	3rd	25	2	27														
	4th																	
	5th																	
	6th																	
	TOTAL	69	6	75	63	7	70											
1994/95																		
	1st																	
	2nd																	
	3rd																	
	4th																	
	5th																	
	6th																	
	TOTAL																	
TOTAL																		

Pass Rate (%) = No. of students proceeded to the following year or No. of students present in the following year / No. of students present x 100

5. 2 Diploma Programme

	1990/91	1991/92	1992/93	1993/94	1994/95	Total
1st	30		31	30		91
2nd	24		30	31		85
3rd	30		24	30		84
TOTAL	84		85	91		260

6. JAPANESE INPUT

6. 1 Despatch of Experts

Area of Specialization	Time and Duration	Nature of Assignment
1. Signal & Communication	3	Short term Expert
2. Television	3	"
3. Quantum Electronics	1	"
4. Electrical Engineering	12	Long term Expert
5.		

Experts required for 1994/95

	Long Term (Man-Month)	Short Term (Man-Month)	Total
1990/91	12	0	12
1991/92	12	0	12
1992/93	12	2	14
1993/94	(12)	(3)	(15)
1994/95	(24)	(7)	(31)
Total	36+ (36)	2+ (12)	38+ (48)

6. 2 Training and Scholarship

	JICA			Japanese Govt. (Mombusho)	Total
	C/P	3rd Group	Local		
1990/91	0	0	0	1 (1)	1 (1)
1991/92	2	0	0	1 (1)	3 (1)
1992/93	1	0	2	1 (1)	4 (1)
1993/94	-	-	-	- (2)	(2)
1994/95					
Total	3	0	2	3 (2)	8 (2)

No. of staff who are still in Japan should be indicated in bracket.

6. 3 Distribution of degrees awarded

	Degree awarded				Total
	Ph.D.	M.Sc.	B.Sc.	Others	
1990/91	0	2	0	0	2
1991/92	0	2	0	0	1
1992/93	0	0	0	0	0
1993/94					
1994/95					
Total	0	3	0	0	3

DEPARTMENT	1990/91	1991/92	1992/93	1993/94	1994/95
Equipment provided or to be expected	1 Equipment purchased in Kenya 2 GPIB Interface Board 3 GPIB Cable (1m 3, 2m 1) 4 DC Ammeter 5 DC Voltmeter	1 Electrical Machines Laboratory Unit 2 3-phase, 1-phase Induction Voltage Regulator, Load 3 P.C.B Unit 4 T.V. and Video deck 5 A/D and D/A Converter 6 GPIB Interface Board 7 Computer 8 Mouse and T-switch 9 Digitizer 10 AutoCAD	1 Power Electronic System 2 Transmission Demonstrator 3 Air Conditioner 4 Printer 5 Cut Sheet Feeder 6 Ink ribbon	1 Micro-wave Trainer 2 Digital Communi. System 3 Elect. Machines Lab. 4 Hand-Held Multimeter 5 Digital-Bench Multimeter 6 Oscilloscope 7 Antenna Systems Demonstrator 8 Micro Computer 9 Computer Software 10 Laser Printer 11 U.P.S 12 Programmable Power Sup. 13 Power Supply 14 Multi-Frequency LCR Meter 15 Lock-In Amplifier 16 Trans. Mission L.D.S. 17 Analogue Phase Meter 18 Digital Phase Meter 19 Sweep Function Generator	1 Power Meter and Sensor 2 High-Voltage Spare Parts 3 Computer Spare Parts and Accessories 4 Photocopy Machine 5 Hall Effect Measurement 6 Digital Oscilloscope 7 Oscilloscope 8 Computer 9 Function Generator

6. 5 Local Cost (K. Shs.)

	Local Research	Textbook/Manual	Exchange Prog.	Seminar	Others	Total
1990/91	0	0	0	0	36,000	36,000
1991/92	0	0	0	0	36,000	36,000
1992/93	102,300	0	71,400	0	52,500	226,200
1993/94	155,000	0	722,000	71,000	346,000	1,294,000
1994/95						
Total	257,300	0	792,400	71,000	470,500	1,592,200

7. Local Cost by Kenyan Government (K. Shs.)

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Emolument	Miscellaneous	Total
1990/91	1,072,800	800,000*	2,000,000*	240,000*	70,800	N/A	2,937,280		4,080,880
1991/92	340,000	840,000*	2,060,000*	120,000*	49,880	N/A	3,941,920		4,330,900
1992/93	250,000	840,000*	1,400,000*	1,200,000*	20,000	N/A	56,339,200*		
1993/94	250,000	840,000*	1,400,000*	1,200,000*	10,000	N/A	63,099,800*		
1994/95									
Total	1,912,800	3,320,000*			420,680		6,878,300		

NOTE

1. * These are centralized votes for the whole university college
2. Under Miscellaneous
 - 2.1 Medical expenses
 - 2.2 Leave allowance
 - 2.3 Maintenance of equipment and buildings
 - 2.4 Insurance

These are also centralised for the whole university college.

8. IGU/PRODUCTION UNIT

- 1. Name of Unit : _____
- 2. Description of Activities :
 - Trouble Shooting
 - Maintenance
 - Repair of Equipment
 - Manufacturing of Aerials

3. Staff and Organization

Senior Technician (Heavy Current)
Technician (Light Current)

4. Balance Sheet in 1992/93

1991/92	3,350.	(income)
1992/93	5,760.	(income)
up to 1993/94	9,112.	(income)

JOMO KENYATTA UNIVERSITY COLLEGE OF AGRICULTURE AND TECHNOLOGY
(UNDERGRADUATE PROGRAMME) PROJECT

COMPILED INFORMATION FOR JICA MISSION

FACULTY OF ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING

J U L Y 1 9 9 3

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1. STAFF LIST
1.1 Academic Staff under University Council

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS ABLE TO COVER IN SYLLABUS FOR B.Sc.	Year/Date of Appointment	Year/Date of Resignation
1	Prof. S. M. Meranga	43	BSc, MSc, PhD	Associate Professor	Production Eng. / Industrial Eng.	Production	Dec. 1990	
2	Dr. L. M. Masu	38	BSc, MSc, PhD	Senior Lecturer	Solid & Structural Mechanics	Strength of Materials	Dec. 1990	
3	Dr. M. S. Wangati	33	BSc, MSc, PhD	Lecturer	Thermodynamics / Fluid Mechanics	Thermodynamics/Fluid Mec	June 1992	
4	Mr. S. P. Ng'ang'a	35	BSc, MSc	Lecturer	Material Science	Material Science	Mar 1991	(Study Leave)
5	Mr. G. M. Kyove	40	BSc, MSc	Lecturer	Fluid Mechanics / Hydraulics	Fluid Mech / Hydraulics	Dec 1990	(Study Leave)
6	Mr. C. E. Muchira	36	HND, MSc	Lecturer	Thermodynamics	Thermodynamics	Dec 1990	
7	Mr. S. K. Ngugi	37	HND, MSc	Lecturer	Internal Combustion Engine	Thermodynamics	Dec 1990	
8	Mr. P. W. Mgatha	40	MSc	Lecturer	Thermodynamics / Computer Science	Thermodynamics	Dec 1990	
9	Mr. H. J. Onyango	35	HND, MSc	Lecturer	Production Technology	Production Technology	June 1992	
10	Mr. B. X. Kariuki	34	BSc, MSc	Lecturer	Thermodynamics / Fluid Mechanics	Thermodynamics/Fluid Mec	June 1992	
11	Mr. R. Murevu	45	HND, MSc	Lecturer	Metal Forming	Production Technology	Feb 1993	
12	Mr. L. N. Kithome		MSc	Assistant Lecturer	Construction Machinery	Plant Construction	Oct 1992	
13	Mr. M. Waringa	33	BSc	Assistant Lecturer	Photo Elasticity	Applied Mechanics	Sep 1992	
14	Mr. H. M. Warui	35	HND, BSc, MSc	Assistant Lecturer	Fluid Mechanics	Fluid Mechanics	Apr 1993	(Study Leave)
15	Mr. G. G. Wanyoike		HND, BSc, MSc	Teaching Assistant	Control Engineering	Control Engineering	Apr 1993	(Study Leave)
16	Mr. S. Wanji		HND, BSc, MSc	Teaching Assistant	Thermodynamics	Thermodynamics	Apr 1993	(Study Leave)
17	Mr. S. O. Molla	27	BSc	Teaching Assistant	Production Technology	Production Technology	Nov 1992	
18	Mr. B. W. Ikua	27	BSc	Teaching Assistant	Machine Design	Production Engineering	Dec 1992	
19	Mr. J. M. Kihiru	30	BSc	Teaching Assistant	Construction Machinery	Applied Mechanics	Oct 1992	(Study Leave)
20	Mr. P. K. Kibicho	25	BSc	Teaching Assistant	Renewable Energy	Thermo / Fluid	Dec 1992	
*	Mr. A. G. Kamande	29	BSc	Teaching Assistant	Production Technology	Production Technology	May 1993	June 1993
*	Mr. J. K. Kiarie	30	BSc	Teaching Assistant	Production Technology	Production Technology	May 1993	June 1993
*	Mr. I. M. Waire	34	BSc, MSc	Lecturer	Control Engineering	Control Engineering	Dec 1990	June 1993

1. 2 Established No. of Academic Staff by Designation and No. of Positions occupied

	Prof.			Assoc. Prof.			S. L.			L.			Asst. L.			Teaching Asst.		
	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance
1990/91	1	0	1	0	0	-1	4	1	3	5	7	-2	3	0	3	4	0	4
1991/92	1	0	0	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0
1992/93	0	0	0	0	0	0	0	0	0	2	0	2	0	5	-5	0	3	-3
1993/94	0	0	0	0	0	0	0	0	0	0	1	-1	0	2	-2	0	9	-9
1994/95	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Total	2	0	1	0	0	1	4	1	3	13	8	4	3	7	-4	4	12	-8

* June 1993

1. 3 Teaching Load (%)

	1st Year						2nd Year						3rd Year						4th Year					
	1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester		
	K _f	K _p	F	K _f	K _p	F	K _f	K _p	F	K _f	K _p	F	K _f	K _p	F	K _f	K _p	F	K _f	K _p	F	K _f	K _p	F
1990/91	43	57	0	43	57	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1991/92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1992/93	36	64	0	36	64	0	36	64	0	36	64	0	-	-	-	-	-	-	-	-	-	-	-	-
1993/94	73	27	0	73	27	0	75	25	0	75	25	0	-	-	-	-	-	-	-	-	-	-	-	-
1994/95																								

K_f : Full-time Kenyan Staff
 K_p : Part-time Kenyan Staff
 F : Foreigners including Japanese

1. 4 Staff Mobility

	Staff appointed	Staff left within 2.5 yrs. service	Staff left within 5 yrs. service
1990/91	9	0	-
1991/92	0	0	-
1992/93	10	1	0
1993/94	5	3	0
1994/95			

	5th Year					
	1st Semester			2nd Semester		
	K _f	K _p	F	K _f	K _p	F
1990/91	-	-	-	-	-	-
1991/92	-	-	-	-	-	-
1992/93	-	-	-	-	-	-
1993/94	-	-	-	-	-	-
1994/95	-	-	-	-	-	-

2. STAFF RECRUITMENT PLAN

2.1 Academic Staff

No.	DESIGNATION	SPECIALITY	1991/92	1992/93	1993/94	1994/95	Total	AVAILABILITY FROM LOCAL UNIVERSITY
1	Professor	Thermodynamics / Fluid Mechanics / Design / Production	1	1	-	-	2	Low
2	Associate Professor	Production Engineering / Industrial Engineering / Thermodynamics	-	-	1	1	2	Low / Low / High
3	Senior Lecturer	Material Science	1	-	-	-	1	Low
4	Senior Lecturer	Mechanics of Machines	1	-	-	-	1	Low
5	Senior Lecturer	Industrial Engineering	1	-	-	-	1	Low
6	Senior Lecturer	Fluid Mechanics	1	-	-	-	1	Low
7	Lecturer	Technical Drawing and Design	1	1	-	-	2	Med
8	Lecturer	Production (Machinery and Metal Forming)	1	-	-	1	2	Med
9	Lecturer	Motor Vehicle (Heavy Construction)	1	1	-	-	2	Low
10	Lecturer	Metrology / Measurement	1	-	-	-	1	Low
11	Lecturer	Fluid Dynamics	1	-	-	-	1	Low
12	Assistant Lecturer	CAD/CAM & Computer Systems	1	-	-	-	1	Low
13	Assistant Lecturer	Design and Drawing	1	-	-	-	1	Low
14	Assistant Lecturer	Production	1	-	-	-	1	Low
15	Teaching Assistant	Applied Mechanics	1	-	-	-	1	Low
16	Teaching Assistant	Fluid Mechanics	1	-	-	-	1	Low
17	Teaching Assistant	Motor Vehicle Technology	1	-	-	-	1	Low
18	Teaching Assistant	Industrial Engineering	1	-	-	-	1	High
TOTAL			17	3	1	2	23	

2. 2 Technical Staff.

No.	DESIGNATION	SPECIALITY	1991/92	1992/93	1993/94	1994/95	Total	AVAILABILITY FROM LOCAL UNIVERSITY
1	Chief Technician	Any of Mechanical Engineering Field	-	-	1	0	1	Low
2	Senior Technician	Thermodynamics / Fluid	-	1	0	0	1	Med
3	Senior Technician	Material Science	-	1	0	0	1	Med
4	Senior Technician	Mechanics of Machines / Mechanical Science	-	-	1	0	1	Med
5	Senior Technician	Metrology	-	-	1	0	1	Med
6	Technician	Instrumentation & Measurements	-	1	0	0	1	High
7	Technician	Materials Science Laboratory	-	-	0	1	1	High
8	Technician	Draftman	-	-	1	0	1	High
9	Chief Technician	Production / Machine / Mechanical Engineering	-	-	0	1	1	Low
10	Senior Technician	Motor Vehicle	-	-	1	0	1	Med
11	Senior Technician	Welding & Fabrication	-	-	0	1	1	Med
12	Senior Technician	Sheet Metal Shop	-	-	0	1	1	Med
13	Senior Technician	Machine Shop	-	1	0	0	1	Med
14	Technician	Sheet Metal & Fitting Shop	-	-	1	0	1	High
15	Technician	Auto-electrics	-	-	1	0	1	High
16	Technician	Store Keeping	-	-	0	1	1	High
		TOTAL	0	4	7	5	16	

3. STAFF DEVELOPMENT PLAN USING JAPANESE FUND AND OTHER SOURCES

3.1 University College Council Staff

Period of JICA Technical Cooperation

No	Staff (Qualification)	AREA OF STUDY	1990	1991	1992	1993	1994	1995	TYPE OF STUDY REQUIRED	
1	H. M. Warui (HND)	Fluid Mechanics	----- ----- ----- ----- -----							Mombusho : (MSc, PhD)
2	G. G. Wanyoike (HND)	Control Engineering	----- ----- ----- ----- -----							Mombusho : (MSc, PhD)
3	S. Wanjii (HND)	Thermodynamics	----- ----- ----- ----- -----							Mombusho : (MSc, PhD)
4	P. W. Magotha (MSc)	CAD/CAM	----- ----- ----- ----- -----							C/P
5	J. M. Kinyu (BSc)	Applied Mechanics	----- ----- ----- ----- -----							Local (MSc)
6	S. P. Nganga (MSc)	Material Science	----- ----- ----- ----- -----							W/Bank : (PhD)
7	G. M. Kyove (MSc)	Fluid Mechanics / Hydraulics	----- ----- ----- ----- -----							C/P
8	A (MSc)	Production / Thermodynamics	----- ----- ----- ----- -----							Mombusho : (MSc,)
9	B (MSc)	Thermodynamics	----- ----- ----- ----- -----							C/P
10	C (MSc)	Applied Energy / Thermodynamics	----- ----- ----- ----- -----							C/P
11	D (Dip)	Workshop Management	----- ----- ----- ----- -----							Local (HND)
12	E (Dip)	Production Technology	----- ----- ----- ----- -----							Local (HND)

4. ACADEMIC ACTIVITIES

4.1 RESEARCH POLICY

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<p><u>1. Objectives</u></p> <ol style="list-style-type: none">1) To develop technologies for ready adoption by the Jua Kali Industries and other rural based industries.2) To engage in research to improve the product and operation in the small scale industries.3) To develop the faculty staff capability in research and where applicable from the basis of the degree award.4) To eventually engage in advanced research for the development of industry as well as new knowledge in the forefront of technology. Thus enable the country's industry to catch up with the latest technologies.5) to disseminate technological information for the benefit of industry. <p><u>2. Areas of Priority</u></p> <ol style="list-style-type: none">1) Efficient energy utilization and development of alternative source of energy.2) Design and creativity development.3) Manufacturing.4) Materials Science. <p><u>3. Strategies</u></p> <p>Development energy utilization and development of alternative source of energy.</p> <ol style="list-style-type: none">1) Staff research projects2) Postgraduate projects3) Undergraduate projects4) Consultancy projects5) Exchange programs6) Seminars	<p><u>4. Possible research to be undertaken</u></p> <p>Examples:</p> <ol style="list-style-type: none">1) Improvement of the performance of the operating characteristic of wind turbine.2) Feasibility of a technological transfer centre of JKUCAT.3) Seminar on University Industry cooperation.<ul style="list-style-type: none">- Seminar on creativity and entrepreneurial engineering- Short courses for engineering graduates and engineers- Workshop on pollution control in motor vehicles- Workshop on engineering education4) Design of equipment for bar tubes drawing for research on polygonal drawing.5) Improvement of charcoal gas engine use for agricultural stationary power unit. <p><u>5. Requirements for the implementation</u></p> <ol style="list-style-type: none">1) Research funds2) Recruitment of more academic staff
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4. 2 LIST OF ACADEMIC ACTIVITIES
- Major Accomplishments from April, 1990 up to July, 1993

NO.	NAME OF RESEARCHER	TITLE	PUBLISHED at	DATE
RESEARCH ACTIVITIES				
1.	Prof. S. M. Maranga	Design of equipment for bar and tubes drawing for research on polygonal drawing	Not published	
2.	P. W. Magocha, K. Tokida (Agr. Eng)	Improvement of the performance of the wind turbine	Published	May 1992
3.	C. M. Ondieki, S. K. Ngugi, T. Inoue	Improvement of charcoal gas engine : Use for agricultural stationary power source	Not published	
4.	Dr. L. N. Masu	Cross bore geometry effects on the strength of pressure vessels	Proceedings of international conference Singapore	Sep 1991
5.				
6.				
SEMINAR ATTENDED				
1.	Dr. Masu	Conference on trends in structures for mining and building, South Africa		Aug. 1991
2.	Dr. Masu	Introduction to CAD/CAM, Sri Lanka		June 1993
3.	Dr. Wangati	Moi University: Industrial Energy Conservation in Kenya		May 1993
4.				
5.				
OTHERS				
1.	Fabrications of Laboratory Apparatus	Belt friction, Universal vibration, Crank mechanism, Beam deflection, Bifilar/trifilar suspension (6 items)		
2.				
3.				

4. 3 LIST OF CURRENT RESEARCH PROGRAMMES

From April, 1990 up to June, 1993

NO.	NAME OF RESEARCHER	TITLE OF RESEARCH	PUBLISHED OR NOT	SOURCE OF FUND
1.				
2.				
3.				
4.				
5.				

4. 4 AREA OF RESEARCH INTERESTS BY STAFF

NO.	FIELD	MAIN TITLE (Long Term Research)	NAME	SUB TITLE
1	Metal Forming / Production Engrg.		Prof. S. M. Maranga	
2	Applied Mechanics	Stress Analysis / Fracture Mechanics Fatigue Strength / Material Strength	Dr. L. M. Masu	
3	Thermodynamics	Heat mass transfer process	P. W. Magoha	
4	Thermodynamics		C. E. M. Muchira	
5	Thermodynamics		S. K. Ngugi	
6	Fluid Mechanics / Hydraulics		G. M. Kyove	
7	Material Science and Metallurgy		S. P. Nganga	
8	Production		H. J. Onyango	
9	Thermodynamics		Dr. Wangati, M.S.	Pre-Heating Boiler (Increased Efficiency) at KAY (3 months Project)
10				
11				
12				
13				

4. 5 Publications and Papers presented out of Research Activities

	No. of Research undertaken	No. of Staff involved			No. of Publications	No. of Papers presented	No. of Research per Staff per Year
		K	J	Total			
1990/91	3	4	1	5	1	0	0.33
1991/92	0	0	0	0	0	0	0
1992/93	0	0	0	0	0	0	0
1993/94							
1994/95							
TOTAL	3	4	1	5	1	0	0.11

K : Kenyan staff
J : Japanese staff

No. of Research per staff per year is expressed as No. of Research undertaken divided by all academic staff in a department in that particular year.
No. of Staff involved may count the same staff repeatedly.

4. 6 Participation of SEMINAR/WORKSHOP/CONFERENCE

	No. of Staff participated			No. of Papers presented	No. of Papers presented per Staff per Year	No. of Papers published out of Seminar/Workshop	No. of Papers published out of Seminar per Staff per Year	No. of Seminar/Workshop per Staff per Year
	K	J	Total					
1990/91	0	0	0	0	0	0	0	0
1991/92	1	0	0	0	0	0	0	0
1992/93	0	0	0	0	0	0	0	0
1993/94	2	0	0	1	0	0	0	0
1994/95								
TOTAL	3	0	0	1	0	0	0	0

4. 7 Total Publications and Papers presented

	No. of Publications	No. of Papers presented	No. of Publications per Staff per Year	No. of Papers presented per Staff per Year
1990/91	1	0	0.11	0
1991/92	0	0	0	0
1992/93	0	0	0	0
1993/94	0	0	0	0
1994/95				
TOTAL	1	0	0.02	0

No. of Publication in 4. 8 is equal to the sum of No. of Publications in 4. 5, 4. 6 and 4. 7.
 No. of Papers presented in 4. 8 is equal to the sum of No. of Papers presented in 4. 5, 4. 6 and 4. 7.
 No. of Publications per staff per year in 4. 8 is expressed as No. of Publications in 4. 8 divided by total academic staff in a department in that particular year.
 No. of Papers presented per staff per year in 4. 8 is expressed as No. of Papers presented in 4. 8 divided by total academic staff in a department in that particular year.

4. 8 Seminar/Workshop organized by Department

	No. of Seminar/Workshop organized by Department		
	Internal	Public	Total
1990/91	0	0	0
1991/92	0	0	0
1992/93	0	0	0
1993/94	-	-	-
1994/95			
TOTAL	0	0	0

4. 9 Textbook/Manual printed

	No. of Staff involved			No. of Books printed	No. of Books printed per Staff per Year
	K	J	Total		
1990/91	0	0	0	0	0
1991/92	5	2	7	6	0.87
1992/93	0	0	0	0	0
1993/94	-	-	-	-	-
1994/95					
Total	5	2	7	6	0.83

No. of books printed per staff per year is expressed as No. of books printed divided by total academic staff in that particular year.

5. STATISTICS OF STUDENT : Planned No. of Student per Class :

	No. of Students admitted			No. of Students present			No. of Students proceeded to the following year			Grade of Graduates				No. of Graduates employed/ on the job						
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	A	B	Pass	F	M	F	Total	
																				No. of Students present
1990/91	29	2	31	29	2	31	29	2	31	29	2	31								
	1st																			
	2nd																			
	3rd																			
	4th																			
	5th																			
	TOTAL	29	2	31	29	2	31	29	2	31	29	2	31							
1991/92	26	0	26	26	0	26	26	0	26	26	0	26								
	1st																			
	2nd																			
	3rd																			
	4th																			
	5th																			
	TOTAL	26	0	26	26	0	26	26	0	26	26	0	26							
1992/93																				
	1st																			
	2nd																			
	3rd																			
	4th																			
	5th																			
	TOTAL																			
1993/94	33	0	33	33	0	33	33	0	33	33	0	33								
	1st																			
	2nd																			
	3rd																			
	4th																			
	5th																			
	TOTAL	33	0	33	33	0	33	33	0	33	33	0	33							
1994/95																				
	1st																			
	2nd																			
	3rd																			
	4th																			
	5th																			
	TOTAL																			
TOTAL	84	4	88	84	4	88	84	4	88	84	4	88	2	2	31					

Pass Rate (%) = No. of students proceeded to the following year or No. of students present in the following year / No. of students present x 100

6. JAPANESE INPUT

6. 1 Despatch of Experts

	Long Term (Man-Month)		Short Term (Man-Month)		Total
	C/P	3rd	Group	Local	
1990/91	2	0	0	0	2
1991/92	0	0	0	0	0
1992/93	1	0	0	0	1
1993/94	1	0	0	0	1
1994/95	4	0	0	0	4
Total	8	0	0	0	8

6. 2 Training and Scholarship

	JICA				Japanese Govt. (Mombusho)	Total
	C/P	3rd	Group	Local		
1990/91	2	0	0	0	0	2
1991/92	0	0	0	0	0	0
1992/93	1	0	0	0	0	1
1993/94	1	0	0	0	0	1
1994/95	4	0	0	0	0	4
Total	8	0	0	0	0	8

No. of staff who are still in Japan should be indicated in bracket.

6. 3 Distribution of degrees awarded to JKUCAT teaching staff as per 6. 2

	Degree awarded				Total
	Ph. D.	M. Sc.	B. Sc.	Others	
1990/91	0	0	0	0	0
1991/92	0	0	0	0	0
1992/93	0	(1)	0	0	(1)
1993/94	0	(2)	0	0	(2)
1994/95	0	(3)	0	0	(3)
Total	0	(3)	0	0	(3)

(86/89 Mombusho)
(89/90 Mombusho)

Experts required for 1994/95

	Area of Specialization	Time and Duration	Nature of Assignment
1.	Mechanica Engineering (General)	ASAP : 1 year	Long Term
2.	Metrology	Jul. 94 : 2 months	Short Term
3.	Thermodynamics	Jul. 94 : 2 months	Short Term
4.			

by June 93

	1990/91	1991/92	1992/93	1993/94	1994/95
EQUIPMENT PROVIDED	Oscilloscope x 1	Anemometer x 1	Pneumatic Training Equipment x 1	CNC Milling Machine x 1	Steel Cabinet x 10
OR TO BE EXPECTED	Plotter x 1	Cutting Force Measuring System x 1	Air Compressor x 1	Trainer x 1	Drawing Board x 15
	Load Cells x 5	LASER Instrument System x 1	Plasma Cutter x 1	CNC Lathe Trainer x 1	Drifter x 15
	Pressure Transducer x 6	Personal Computer x 1	Digitizer x 1	Heat Transfer Bench x 1	Cosumable Parts for Workshop Machineries --
	Acceleration Transducer x 2	Others x 3	Plotter x 1	Cross Flow Heat Exchanger x 1	
	Potensio Meter x 2		Uninterrupted Power Supply Unit x 1	Combustion Process Analyzer x 1	
	Differential Transformer x 4			Stirling Engine Apparatus x 1	
	Others x 16			Flow Visualization Apparatus x 1	

6. 5 JICA Local Cost (K. Shs.)

	Local Research	Textbook/Manual	Exchange Prog.	Seminar	Others	Total
1990/91						
1991/92						
1992/93						
1993/94						
1994/95 (planned)						
Total						

7. Local Cost by Kenyan Government (K. Shs.) Page: _____

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Emolument	Miscellaneous	Total
1990/91									
1991/92									
1992/93									
1993/94									
1994/95									
Total									

8. I GU / PRODUCTION UNIT

- 1. Name of Unit : _____
- 2. Description of Activities :

3. Staff and Organization

4. Balance Sheet in 1992/93

JOMO KENYATTA UNIVERSITY COLLEGE OF AGRICULTURE AND TECHNOLOGY
(UNDERGRADUATE PROGRAMME) PROJECT

COMPILED INFORMATION FOR JICA MISSION

RESEARCH, PRODUCTION & EXTENSION (RPE)

I P I / S E M U

Institute of Production and Innovation
Scientific Equipment Maintenance Unit

J U L Y 1 9 9 3

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1. STAFF LIST
1.1 Senior Staff under University Council

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS ABLE TO COVER IN SYLLABUS FOR B.Sc. *	Year/Date of Appointment	Year/Date of Resignation
1	S. K. Neogi	37	MSc	Director, IPI	Internal Combustion Engine	Thermodynamics	Sept 1991	
2	N. Boro	49	BND, DNS	Director, SEMU	Production Engineering		July 1990	
3								
4								
5								

1.2 Established No. of Senior Staff by Designation and No. of Positions occupied

	Prof.			Asoc. Prof.			S.L.			L.			Asst. L.			Teaching Asst.		
	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance	Est. No	No. Occp.	Balance
1990/91							2	0	2	0	0	0	2	0	2			
1991/92							0	0	0	0	0	0	0	0	0			
1992/93							0	0	0	0	0	0	0	0	0			
1993/94							0	0	0	0	0	0	0	0	0			
1994/95							0	0	0	0	0	0	0	0	0			
Total							2	0	2	0	0	0	2	0	2			

1.4 Staff Mobility

	Staff appointed	Staff left within 2.5 yrs. service	Staff left within 5 yrs. service
1990/91	2	0	0
1991/92	1	1	0
1992/93	0	0	0
1993/94	0	0	0
1994/95			

New director appointed (IPI)

1. 5 Technical Staff under University Council

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	REMARKS/REQUIRED FOR
1	P.E.O. Apondi	37	Mec. Eng. HND	Senior Technician		IPI (Study Leave)
2	F. Gathumbi	26	Mec. Eng. Dip	Technician	Fabrication and Welding	IPI
3	J. Maina	26	Mec. Eng. Dip	Technician	Welding	IPI
4	I. Fecha	26	Mec. Eng. Dip	Technician		IPI
5	S.A. Mjomba	27	Mec. Eng. Dip	Technician		IPI
6	I. Misoi	27	Agr. Eng. Dip	Technician	Machine Tools	IPI
7	J.D. Wanina	27	Agr. Eng. Dip	Technician	Machine Tools	IPI
8	M. Majambo	27	Agr. Eng. Dip	Technician		IPI
9	E.T. Mjwa	26	Agr. Eng. Dip	Technician		IPI
10	X.A. Othmanbo	27	MVT Part III	Technician	Motor Vehicle	IPI
11	J.K. Wamee	27	AMT Part III	Technician	Construction Plant	IPI
12	X.M. Mujure	26	Trade Test III	Trainee, Mechanist		IPI
13	F. Njuguna	26	Mec. Eng. Dip	Technician	Motor Vehicle	SEMU
14	R.W. Nyanjui	26	Mec. Eng. Dip	Technician	Motor Vehicle	SEMU
15	C.K. Moss	27	MVT Part III	Technician	Mechanical Science	IEET

1. 6 Established No. of Technical Staff by Designation and No. of Positions occupied

	Chief Technician		Senior Technician		Technician		Subordinate staff	
	Est. No	No. Occp.	Est. No	No. Occp.	Est. No	No. Occp.	Est. No	No. Occp.
1990/91	1	0	1	1	1	13	1	0
1991/92	1	0	1	0	1	13	1	0
1992/93	2	0	4	0	7	0	0	0
1993/94	0	0	0	0	0	0	0	0
1994/95	2	0	4	1	7	13	0	1
Total								

* Revised Plan (Not Approved)
7 technicians to be transferred to Engineering Workshops

X left

2. STAFF RECRUITMENT PLAN

2. 2 Technical Staff

No.	DESIGNATION	SPECIALITY	1991/92	1992/93	1993/94	1994/95	Total	AVAILABILITY FROM LOCAL UNIVERSITY
1	Chief Technician	Workshop management / Production engineering	-	-	1	0	1	Low (IPI)
2	Senior Technician	Production Engineering / Industrial Engineering	-	-	1	0	1	Med (IPI)
3	Senior Technician	Agricultural machinery	-	-	1	0	1	Med (IPI)
4	Technician	Technical drawing	-	-	1	0	1	High (IPI)
5	Senior Technician	Workshop management / Motor vehicle engineering	-	-	1	0	1	Low (SEMU)
6	Technician	Electrical engineering	-	-	2	0	2	High (SEMU)
7								
8								
9								
10								
11								
12								
13								
14								
15								
TOTAL			-	7	0	0	7	

3. STAFF DEVELOPMENT PLAN USING JAPANESE FUND AND OTHER SOURCES

3.1 University College Council Staff

Period of JICA Technical Cooperation

No	Staff (Qualification)	AREA OF STUDY	1990	1991	1992	1993	1994	1995	TYPE OF STUDY REQUIRED
1	P. E. Apodi (HND)	Agri. Machinery Design.							C/P
2	B (TP3)	Farm Implement Design							C/P
3	C (Dip)	Mechanical Engineering							Local (HND)
4	D (Dip)	Mechanical Engineering							Local (HND)
5	D (Dip)	Mechanical Engineering							Local (HND)
6									
7									
8									
9									
10									

4. ACADEMIC ACTIVITIES

4.1 RESEARCH POLICY (IPI)

1. Objectives

- 1) To improve production technology for the small scale industries and other rural based industries.
- 2) To improve production technology of farm machineries for the small scale agriculture.
- 3) To engage in research to improve the product and operation in the small scale industries and agriculture.
- 4) To develop the technical staff capability in research and production

2. Areas of Priority

- 1) Marketing research for agricultural implement and small scale industrial products.
- 2) Development of jig and tools for small scale industries.
- 3) Development of farm implement for small scale agriculture.

3. Strategies

Research and development of agricultural and industrial sector shall be carried by conjunction with student project to enhance practical skills for the student as well as increasing technical knowledge in the wider field for IPI.

- 1) Staff research projects
- 2) Student projects
- 4) Consultancy projects
- 5) Exchange programs
- 6) Seminars

4. Possible research to be undertaken

- A) Small Scale Industrial Sector (Jig and tools)
 - Press tools
 - Punch and dies
 - Drilling tools
 - Cutting tools
 - Bending tools
 - Rolling tools

- B) Agricultural Machinery / Farm Implement Sector
 - Hand tractor
 - Stationary power unit
 - Cultivating machinery
 - Planting machinery
 - Irrigation equipment
 - Harvesting machinery
 - Post-harvesting machinery
 - Windmills
 - Water wheels

- C) Electrical Section
 - Charging / Lighting system
 - Solar power converting system
 - Elect. power stabilizing system
 - Power back-up for computers
 - Automatic lighting device
 - Power failure monitor / warning system
 - Electric security system
 - Car alarm / anti-theft devices
 - Induction coils for metal heat treatment
 - TV aerials(antennas)

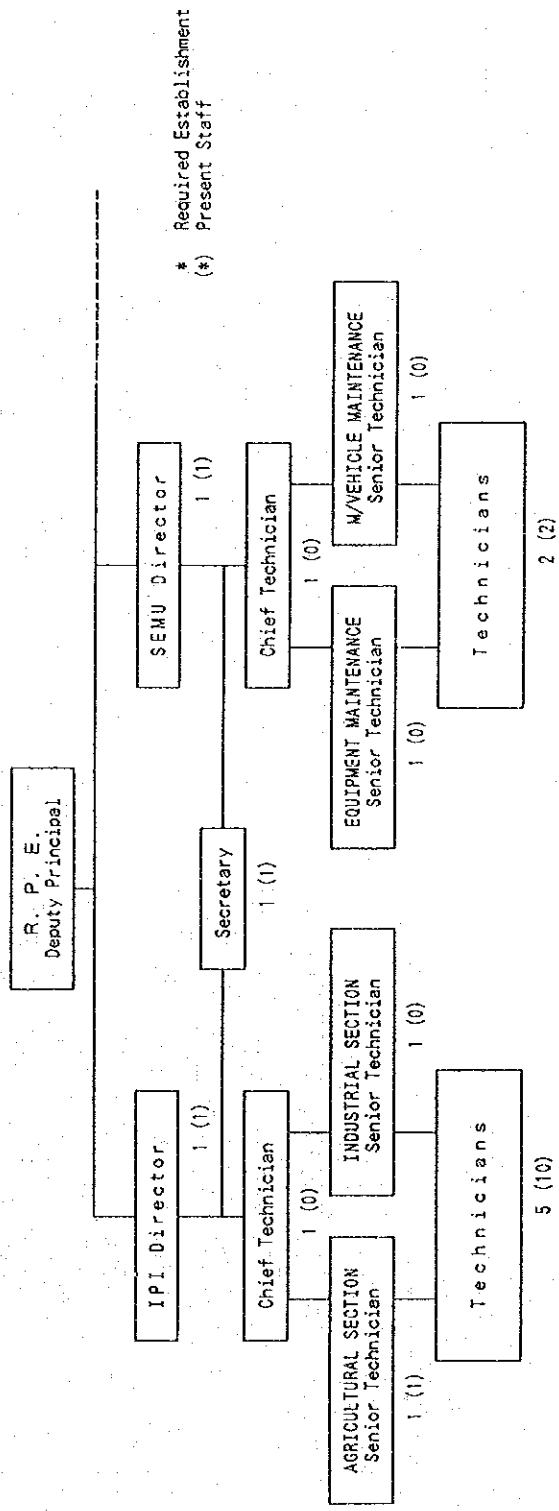
5. Requirements for the implementation

- 1) Recruitment of more senior technical staff
- 2) Research funds
- 3) Design and drawing facilities

5. IGU / PRODUCTION UNIT

5-1. Institute of Production and Innovation (IPI) & Scientific Equipment Maintenance Unit (SEMU)

(PROPOSED ORGANIZATION STRUCTURE AND ESTABLISHMENT)



* Required Establishment
(* Present Staff

Jomo Kenyatta University College of Agriculture and Technology
 FACULTY OF ENGINEERING

C O N T E N T S

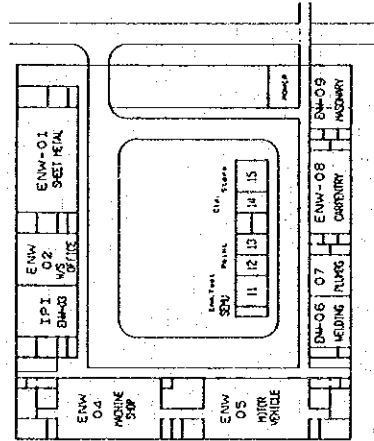
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Appendix 6.	Budget Allocation
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Appendix 8.	Estimated Staff Enumerations

PROPOSED DOCUMENT FOR

THE ESTABLISHMENT OF A FACULTY OF ENGINEERING WORKSHOP.

02 / 07 / 93



2. INTRODUCTION

When the Jomo Kenyatta College of Agriculture and Technology started its training, the Engineering Workshops Area was divided and managed by three departments, namely, Mechanical, Civil and Architecture. Each workshop had a technician who was an inventory holder and was responsible for the facility on behalf of the the Chairman of the department. Requests for utilization of any facility were being addressed to the chairmen of the departments, as a formality. If any of the request was turned down, then the Deans or Principal would mediate, giving first priority to the department which was responsible for the facility. The timetabling committee was established to rationalise usage of college facility. Within the faculty services offered interdepartmentally were not surcharged.

Utilization factor for each facility varied from 20%-80%. This depended on the curriculum and semester in consideration. To improve on this factor, the College proposed the establishment of production units in 1985. The production units later were changed to training, research and development units (TRADU) in order to maintain the main objective of the workshops as a training unit and not mainly a production unit. The units were to be established, managed and budgetted for by each department. Success in establishing these units was reported in the departments of Food Technology and Post Harvesting (Bread, Yorghurt, Juice, Sausage) and Horticulture (Seedlings).

The Workshop Management aims to introducing limited production with maximum utilization and an efficient workshop area.

The objectives of establishing a Workshop Management are :-

1. To improve and develop the utilization of the facilities and capabilities.
2. To implement practical application of research finding in development of projects.
3. To equip students/trainees with practical skills, aptitudes, competence and confidence relevant to industry.
4. To enhance the effectiveness of students projects of affording them the opportunity to design, make prototypes, carry out testing and eventually producing them efficiently.

To achieve this the workshop management should have a separate and independent budget from departmental budgets. Also any income generated from the workshops could be ploughed back into research, design, development of products, staff development and student training programmes.

1. PREAMBLE

With the possibility of cuts in grants to universities by the government, the universities have to look for ways to ensure efficient and effective utilization of available funds and resources.

The JKUAT is no exception. The Engineering Workshops where the Engineering and Architectural students are equipped with technical skills is one area where grants extended to the university college are spent. Here, the funds are used to provide raw materials for Workshop practice in the course of normal teaching and internal industrial attachment. The funds are also used to purchase tools and maintain the equipments in the workshop. Poor management of this area can lead to inefficient and ineffective utilization of resources.

Currently, the workshop facilities and resources are managed by three departments of the Faculty of Engineering i.e. Architecture and Civil engineering (Carpentry, Masonry, Plumbing), Mechanical (Motor vehicle, Machine, Welding), IPI and SEMU which were initially set up to use the workshop facilities for production and maintenance activities respectively are also housed inside the same perimeter of the workshop but fall directly under Research, Production and Extension (RPE). Transport and Estate sections (Admin.) also require usage of those workshop facilities for their maintenance work.
(See Appendix 1.)

A Faculty Subcommittee which was set up to look into the current management system found the system to be inefficient, ineffective and wasteful.

This document proposes the remedies required to correct the situation to ensure that the workshop facilities and resources are properly managed and utilized. It shows the cost of which this can be done and the short term and long term benefits of reorganising the management.

3. EXISTING PROBLEMS

- 1 The maintenance of the whole workshop, which is very necessary, is not under any department.
- 2 Encroachment by production departments such as IPI and SEMU is not checked. This is likely to interfere with academic programmes as the production sections compete for same facilities with teaching departments.
- 3 Raw materials used by the encroaching sections are not properly accounted for and charged. This raises the problems of budgetary control.
- 4 It is difficult to account and charge for tool damage, tool loss or equipment wear.
- 5 The buildings in which the various heads of departments are housed being far from the workshop, the activities of the workshop staff are not closely monitored or supervised. This raises the danger of the staff members absenting themselves without knowledge of the heads of departments.
- 6 Duplication of the purchases of raw materials and equipment. There is a danger, here, of departments tying down funds in similar stock of raw materials. Also it can lead to under utilization of equipment.

4-1. PROPOSED REMEDIES & THE SHORT TERM AND LONG TERM BENEFITS

4-1. PROPOSED REMEDIES

- 1 The workshop facility be delinked from the departments and the workshop be managed as a common facility under the faculty of engineering.
- 2 A central authority headed by a workshop manager be established to run the workshop.
- 3 Workshop practice and industrial attachment needs by the various departments be communicated to the workshop management before the beginning of every semester. This will enable the workshop to prepare adequately.

4 IPI and SEMU should request the use of the workshop facilities from the workshop management. All requests to be charged accordingly and funds generated ploughed back to improve the workshop.

5 The workshop should be provided with a delivery van to enable quick purchases and delivery of raw materials.

4-2. SHORT TERM AND LONG TERM BENEFITS

- Equitable share of workshop use depending on syllabus of each department
- Easier purchase of parts, raw materials and consumable due to central purchasing
- Reduction in wastage of materials
- Better coordinated production - faster, better quality, more transparency
- Smoother handling of students - workshop practice internal attachment
- Less time wasted by department in coordinating workshop students affairs against production
- Easy to account for technical staff, and hence, smoother upward mobility
- Reduction of "Kingdoms" in departments
- Reduction of "Personal production"
- Creating competition in terms of individual shop safety, cleanliness, organization
- Less control by college administration

5. IMPLEMENTATION

5-1. IMMEDIATE ESTABLISHMENT

- The immediate establishment structure is shown in Appendix 2.
- Total establishment post(26) is based on present workshop staff.
- Two new posts (Workshop Manager and Secretary) are required either transferring from other departments or by new recruitment.
- Workshop manager should be appointed from present staff who is familiar with all workshop operations for smooth set up of new management.
- Chief Technician could be posted as acting post from one of present Senior Technician for immediate establishment.
- Appendix 4 shows present staff allocation and relocation for new establishment

Duties and Responsibilities

- Workshop Manager (Senior Lecturer Level)
Answerable to the Dean Faculty of Engineering
 - Responsible for all the workshop operations ; Academic and production activities in the workshop
 - Co-ordination of the activities of the Chief Technician, Store Keeper, Accounts Clerk
 - Control workshop vote book
 - Co-ordinate departmental students/staff activities in the workshop
 - Authorization of the procurement of raw materials, consumables, equipments, etc.
 - Liaise with the various departments on students workshop practice, students projects and spending
 - Chair workshop management committee meetings
 - Attend faculty board meetings
 - In-charge of workshop staff development and discipline
 - Create industrial contacts wit other institutions which have got workshops and research facilities
 - Co-ordinate internal industrial attachment

- Chief Technician (Lecturer Level)
Answerable to the Workshop Manager
 - Preparation of the overall workshop utilization schedule for each semester, i.e. overall workshop timetable for students workshop practice and other activities
 - Co-ordinate use of the various shops in the workshop
 - Co-ordinate the student workshop practice and the use of the workshop for other projects
 - Co-ordinate production activities in the workshop
 - Co-ordinate with the store and accounts for the purchase and procurement of equipments, parts, raw materials and consumables
 - Prepare budgetary estimate for the workshop
 - Prepare regular financial appraisal on the spendings of various departments
 - To supervise the technicians in the workshop

- Senior Technicians (Grade D,E,F)
Answerable to the Chief Technician
 - Prepare a schedule for usage of shops for workshop practice
 - In-charge of operations and maintenance of all machines and equipments in shops under his discipline area, (Architectural&Civil/Mechanical)
 - In-charge of all activities in the shops
 - In-charge of general cleanliness and safety measures in the shops
 - In-charge of technicians and artisans in the shops
 - In-charge of quality control of items/service produced in the shops

Technician (Grade A,B,C)
Answerable to the Senior Technician.

Cleaner (workshop) (Grade I,II)

Other Staff

- 1) Accounts clerk
Answerable to the Finance Officer
 - Paying and receiving money as may be required by the workshop operations
- 2) Secretary (Grade A,B)
- 3) Messenger (Grade I,II)
- 4) Cleaner (office) (Grade I,II)

5-2. LONG TERM ESTABLISHMENT

- The long term establishment structure is shown in Appendix 3.
- Duties and responsibilities are same as the "immediate establishment".
- To facilitate over-all co-ordination of workshop activities by Chief Technician and Workshop Manager, each workshop is directly supervised by Chief Technician with assistance of each Senior Technician as shown in the chart.

- Store Technician is relocated from one of workshop technician under Chief Technician for centralized control of all 'shops' materials.

Store Technician (Grade A,B,C)

- In-charge of storage and control raw materials, parts and consumables in all shops
- Handling and storage of products for sale or for the students projects
- To liaise with the Chief Technician and Accounts Clerk on the purchases for the workshop

5-3. QUALIFICATIONS AND REQUIREMENTS FOR THE VARIOUS POSTS

(1) Workshop Manager

- MSc/HND in Mechanical Engineering
- Minimum 3 years experience in workshop management
- (Production or Technical Institute/University)
- Capability of workshop management
- (Machine maintenance, Store keeping, Quality control, Accounting, Personnel management, etc.)

(2) Chief Technician

- BSc/HND in Mechanical/Civil/Electrical Engineering or Architecture
- Minimum 5 years experience in institutional workshop
- Minimum 3 years experience as Senior Technician or equivalent post
- (Guiding students' workshop assignments/projects)
- Capability of workshop management/co-ordination
- (Machine maintenance, Store keeping, Quality control, Accounting, Personnel management, etc.)

- (3) Senior Technician
- (4) Technician / (Store Technician)

- (6) Secretary
- (7) Messenger
- (8) Cleaner

(same as current qualifications and requirements for relevant post and field in JKUCAT)

5-4. REQUIREMENT FOR FURNITURE AND EQUIPMENT

Apart from the present workshop facilities, the following furniture and equipment will be required for the manager and the chief technician's offices to facilitate new workshop management.

- Both the workshop manager and the chief technician's office(s) should be arranged within the existing workshop buildings.

(FURNITURE)

- Executive desk and chair 1
- Secretary desk and chair 1
- Ordinary desk and chair 1
- Ordinary chair 4
- Sofa set 1
- Filing cabinet 2
- Book shelf 1
- Multi-drawer cabinet 2
- Pin board 2

(EQUIPMENT)

- Electrical typewriter 1
- Copy machine 1

(STATIONARY)

- Adequate non-consumable stationaries :
Tray, Punch, Stapler, Basket, etc.

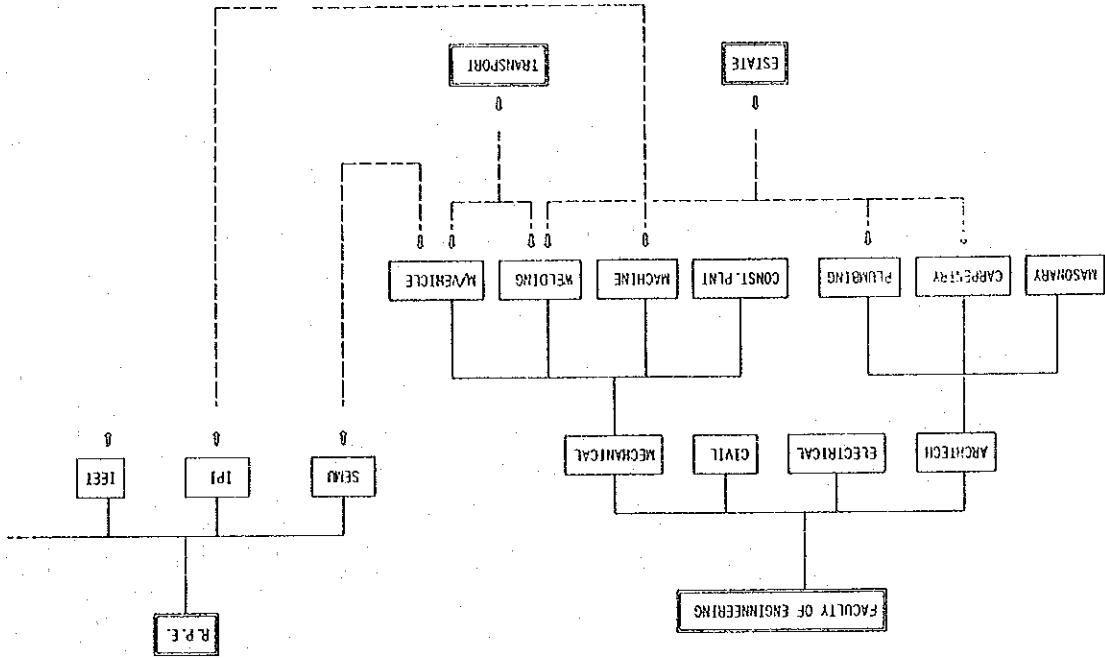
5-5. BUDGET.

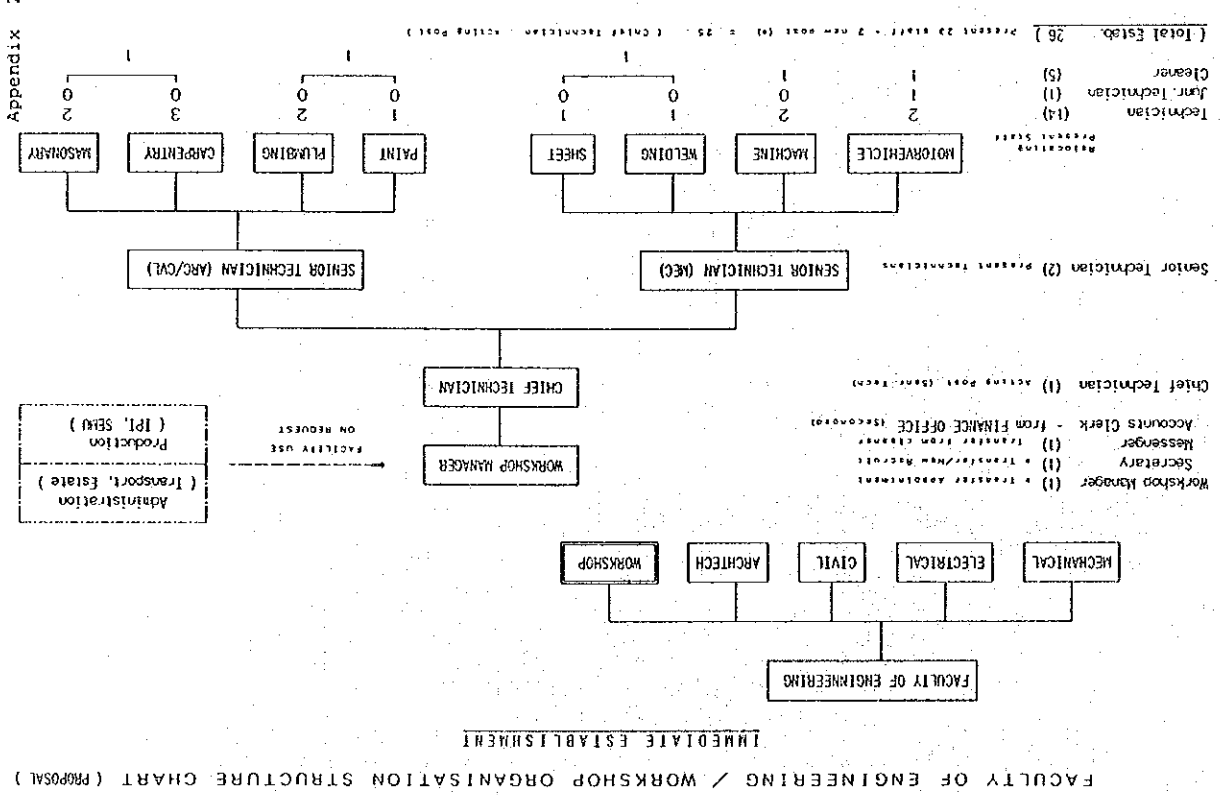
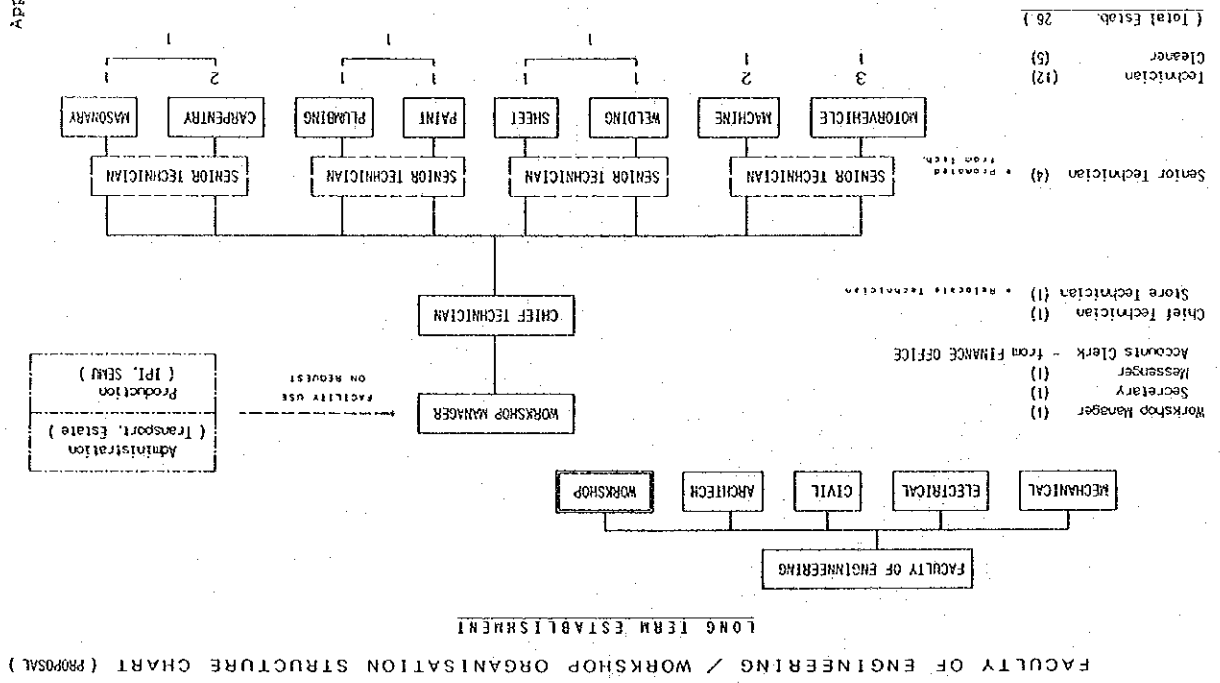
- The estimated budget for new management is shown in Appendix 5.
- Budget allocation for each workshop and office is shown in Appendix 6.
- Since workshop facilities are to be used by several departments, i.e. Mechanical sections : Mech., Elec., Ag.Eng., Civil., Arch. Arch./Civi.sections : Arch., Civil., Mech., total budget for workshop management should be shared according to the proportion of workshop use.
- Proposed budget sharing proportion chart is shown on Appendix 7.
- Raw materials and other cost for student practice should be clearly calculated and settled with budget allocation from each department.
- Estimated Staff Enumerations is shown on Appendix 8.
- Budget estimation does not include "Furniture" and "Equipment".(5-4)*

6. CONCLUSIONS AND RECOMMENDATIONS

From the foregoing analysis it is clear that apart from the two new posts (Workshop Manager & Secretary), all the other posts required for the establishment of the Faculty Workshop can be filled from the existing establishment in the departments. The Workshop Manager post can initially be filled by appointing a member of the academic staff from the Faculty to act for a period of 2 years, while that of a secretary can be filled by recruitment. This means that the financial implecation involved as far as the personnel is concerned are minimal and therefore the Faculty Workshop should be established as soon as possible.

PRESENT ORGANIZATION CHART (WORKSHOP MANAGEMENT)





WORKSHOP STAFF ESTABLISHMENT

	PRESENT STAFF		ESTABLISHMENT	
	S.T. Tec.	J.T. Cln	C.T.	S.T. Tec. J.T. Cln
01 Sheet Metal				1
02 CP / (Office)	1	1		-
04 Machine	1	2	1	2
05 Motorvehicle	4	1	2	1
06 Welding	2	1	1	1
07 Plumbing	1		2	
08 Carpentry	2	1	3	
09 Masonry	1	2	2	2
11 Testing				
12/13 Paint				
TOTAL NUMBER (Workshops)	2	14	1	5
			(1)	2
				14
				1
				5
				Total 22 (23)

01-06 : Mech. Dept. Staff (15)
 07-09 : Arch. Dept. Staff (8)
 *
 C.T.- Chief Technician
 S.T.- Senior Technician
 Tec.- Technician
 J.T.- Junior Technician
 Cln.- Cleaner

Total 25 (26)

ESTIMATED BUDGET FOR PROPOSED WORKSHOP MANAGEMENT

(Annual budget / Unit in K.Shs. based on 06/93 market prices)

Items :	Calculations	Total
1. STATIONARIES		
Copy paper	400 x 5	2,000
Paper File	50 x 80	4,000
Ballpoint pen	200 x 5	1,000
Photocopy	2 x 1000	2,000
Others	- -	5,000
		(14,000)
2. WORKSHOP MAINTENANCE COST		
Detergent for shop floor	500 x 20	10,000
Broom, Wiper	100 x 20	2,000
Waste cloth	500 x 4	2,000
Hand washing liquid	500 x 20	10,000
Detergent for work wear	100 x 50	5,000
Paint, Thinner	300 x 20	6,000
Raw-material (minor)	- -	5,000
		(40,000)
3. EQUIPMENT MAINTENANCE COST		
Lubricant	500 x 20	10,000
Repair cost (minor)	- -	70,000
Rawmaterial (minor)	- -	10,000
		(90,000)
4. WORK WEARS FOR TECHNICAL STAFF		
Work wear	4000 x 20	80,000
		(80,000)
5. RAW-MATERIALS AND EXPENDABLES FOR STUDENT PRACTICES		
Welding rod	2500 x 20	50,000
Welding gas	3000 x 20	60,000
Grinding wheel/disc	1500 x 20	30,000
Drill bit, Tap	500 x 2	10,000
File, Sand paper	500 x 10	5,000
Hacksaw blade	2500 x 2	5,000
Flat bar, Round bar	2000 x 20	40,000
Angle, Channel	3000 x 10	30,000
Sheet metal	2500 x 20	50,000
GI pipe	1000 x 20	20,000
PVC pipe	1000 x 20	20,000
Timber	- -	70,000
Bolt, Nut, Screw, Nail	- -	20,000
Paint, Thinner	300 x 20	6,000
Hand washing detergent	500 x 20	10,000
Waste cloth, Towel	500 x 10	5,000
		(431,000)
6. MOTORVEHICLE MAINTENANCE / RUNNING COST		
Fuel	25 x 50,000 x 12,000	15,000
Road Toll	20 x 5 x 12	1,200
Insurance, Road licence	- -	10,000
Repair parts	- -	10,000
		(36,200)
Grand Total		Shs. 691,200.

BUDGET ALLOCATION (PROPOSAL)

ITEM / WORKSHOP	Offc	01	04	05	11	06	07	12	08	09	TOTAL
1. Stationaries	14,	-	-	-	-	-	-	-	-	-	14,000.
2. Workshop Maintenance	5,	4,	6,	5,	1,	4,	4,	3,	5,	3,	40,000.
3. Equipment Maintenance	10,	10,	20,	10,	-	10,	5,	5,	15,	5,	90,000.
4. Work Wears	4,	4,	8,	12,	8,	4,	8,	8,	12,	12,	80,000.
5. Materials/Expendables	-	86,	85,	20,	-	90,	40,	10,	80,	20,	431,000.
6. Motor Vehicle Cost	36,	-	-	-	-	-	-	-	-	-	36,200.
T O T A L	69,	104,	119,	47,	9,	108,	57,	26,	112,	40,	691,200.

x 1000 K.Shs. | K.Shs.

Appendix 6

BUDGET SHARING PROPORTIONS (PROPOSAL)

ITEM / DEPARTMENT	Mech.	Arch.	Civil.	Elec.	Ag.En.	TOTAL
1. Stationaries	6,000 **	3,000 **	3,000 **	1,000 *	1,000 *	14,000.
2. Workshop Maintenance	17,000 **	8,000 **	5,000 **	5,000 **	5,000 **	40,000.
3. Equipment Maintenance	40,000 **	15,000 **	15,000 **	10,000 **	10,000 **	90,000.
4. Work Wears	40,000 **	10,000 **	10,000 **	10,000 **	10,000 **	80,000.
5. Materials/Expendables	200,000 **	100,000 **	31,000 *	30,000 *	70,000 **	431,000.
6. Motor Vehicle Cost	20,000 **	5,000 **	5,000 **	3,100 *	3,100 *	36,200.
T O T A L	323,000 **	141,000 **	69,000 **	59,100 *	99,100 **	691,200.

- * Small figures shown after amount is proportions in % for each item.
- * These share proportions are only for the initial contributions from each department.
- * Every end of fiscal year, actual cost should be calculated and settled.

Appendix 7

Appendix 8

WORKSHOP STAFF ENUMERATIONS

Annual budget , Unit in K.£ .

Based on present average salary scale

(Incl. : Salary, Hse. & Leave Allowances)

POST	LEVEL/GRADE	No.	Per Person	TOTAL
1. Workshop manager	Senior Lectuer	1	16,953.	16,953.
2. Chief Technician	Lecturer	1	15,387.	15,387.
3. Senior Technician	D,E,F	4	9,818.	39,272.
4. Technician	A,B,C	13	5,970.	77,610.
5. Secretary	A,B	1	5,970.	5,970.
6. Cleaner	I,II	5	2,133.	10,665.
7. Messenger	I,II	1	2,133.	2,133.
(TOTAL)		26	K.£.	167,990.

JOMO KENYATTA UNIVERSITY COLLEGE OF AGRICULTURE AND TECHNOLOGY
(UNDERGRADUATE PROGRAMME) PROJECT

COMPILED INFORMATION FOR JICA MISSION

FACULTY OF

SCIENCE

DEPARTMENT OF

MATHS AND COMPUTER SCIENCE

JULY, 1993

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I. STAFF LIST (as of 31st July, 1993)

Page: _____

1.1 Academic Staff

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO BE COVERED IN SYLLABUS FOR B.Sc. *	Year/Date of Appointment	Year/Date of Resignation
1	Uppal, Dr. Surindar Mahan	57	BA, BT, MA (all Punjab, India) Ph. D. (Kenyatta)	Associate Professor, COD Lecturer	Applied Mathematics	Differential Geometry, App. Math. Probability and Statistics	March, 1993	
2	Humphreys, Henry Murray	52	MA, MSc, Dip Ed	Lecturer	Statistics	Linear Algebra, Differential Equals.	April, 1990	
3	Kinyanjui, Mathew	31	BEd (Sc), M Sc	Lecturer	Applied Mathematics	Numerical Analysis Calculus, C. Science	October, 1989	
4	Macharia, Jimmy K. Njoroge	33	BEd (Sc), MSc, PG DipOS	Lecturer	Applied Mathematics Computer Science	Probability and Statistics	October, 1989	
5	Muchina, Moses Njoroge	34	BEd (Sc), MSc	Lecturer	Statistics	Computer Science	November, '89	
6	Okech, Sylvanus Juma	38	B. Tech Ed, MSc PGDip (CS)	Lecturer	Computer Science	Probability and Statistics	April, 1992	
7	Makambi, Kepher Henry	30	B.Ed (Sc), MSc	Lecturer	Statistics	Probability and Statistics	October, 1990	
8	Wekesa, John Mafumbo	37	B.Ed(Sc), MSc	Lecturer	Statistics	Probability and Statistics	March, 1991	
9	Otedo, Joel Menna	39	B.Ed(Sc), MSc, Dip in C Ed	Lecturer	Computer Science	Computer Science	April, 1993	
10	Wali, Augustus Nzomo	30	B.Ed(Sc) MSc	Ass. Lecturer	Pure Mathematics	Real & Complex Analysis, number theory	March, 1991	
11	Odhiambo, Romanus Orijeno	31	B.Ed(Sc), Msc	Ass. Lecturer	Statistics	Probability and Statistics	April, 1992	
12	T. Ari, David Mwangi	29	B.Ed(Sc), MSc	Ass. Lecturer	Applied Mathematics	Numerical & Vector Analysis, Fluid Mec.	April, 1992	
13	Macahana, Aggrey	31	BSc, MSc	Ass. Lecturer	Computer Science	Electronics, Computer Science	April, '92	
14	Kibaru, Francis Njoroge	24	B.Ed(Sc), MSc	Ass. Lecturer	Pure Mathematics	Real & Complex Analysis, Topology	May, 1992	
15	Gachinbi, Cecilia Mangachi	30	E.Ed(Sc), MSc	Ass. Lecturer	Pure Mathematics	Group, Ring & Field Theory, G. Mathematics	May, 1992	

1.2 Established No. of Academic Staff by Designation and No. of Positions filled

	Prof.		Ass. Prof.		S.L.		L.		Asst. L.		Teaching Asst.	
	Est.No	No.fill.	Est.No	No.fill.	Est.No	No.fill.	Est.No	No.fill.	Est.No	No.fill.	Est.No	No.fill.
1990/91	0	0	0	0	0	0	1	1	6	6	2	2
1991/92	0	0	1	0	4	1	12	5	7	4	5	5
1992/93	0	0	2	1	5	1	12	5	7	6	5	3
1993/94	1	0	3	1	8	0	12	8	4	7	4	6
1994/95	2		3		8		16				7	
Total*	2		3		8		16				7	

* : No. of staff required for the ultimate consolidation of the Department.

1. STAFF LIST (as of 31st July, 1993)
1.1 Academic Staff

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO BE COVERED IN SYLLABUS FOR B.Sc. 1)	Year/Date of Appointment	Year/Date of Resignation
16	Kinyua, Francis	28	BSc, MSc	Ass. Lecturer	Pure Mathematics	Group, Ring & Field Theory, G. Mathematics	July, 1992	
17	Gachitu, George Macharia	42	B.Ed, MSc (Pending)	Teaching Ass.	Applied Mathematics	Differential Eqs, Fluid Mechanics	Nov. 1991	
18	Gatharia, Loise Wanjiku	29	B.Ed (Sc), PG Dip C S	Teaching Ass.	Computer Science	Computer Science	Sept. 1988	
19	Martanga, Irene Sitawa *	25	B.Ed (Sc)	Teaching Ass.	Applied Mathematics	Differential Eqs., Fluid Mechanics	May, 1992	
20	Gituru, Francis Nderi	24	B.Sc	Teaching Ass.	Pure Mathematics	Real & Complex Anal ysis, G. Mathematics	April, 1992	
21	Mwita, Peter Nyamuhanga	24	B.Sc	Teaching Ass.	Statistics	Probability & Stati stics, G. Math.	April, 1992	
22	Ombuki, Beatrice Moraa	24	B.Sc	Teaching Ass.	Computer Science	Computer Science	April, 1992	
23	Ono, Yasufumi	47	B.Sc, MSc	Japanese Expert	Computer Science	Computer Science	Oct. 1990	
	* On study leave							

1.2 Established No. of Academic Staff by Designation and No. of Positions filled

	Prof.		Asst. Prof.		S.L.		L.		Asst. L.		Teaching Asst.	
	Est.No	No. fill.	Est.No	No. fill.	Est.No	No. fill.	Est.No	No. fill.	Est.No	No. fill.	Est.No	No. fill.
1990/91												
1991/92												
1992/93												
1993/94												
1994/95												
Total*												

* : No. of staff required for the ultimate consolidation of the Department.

1.5 Technical Staff

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	REMARKS/REQUIRED FOR
1	Maloba, Charles	26	Technician Part 3	Technician	Computer Programming and maintenance	
2						
3	Nyambu, Tobias Mwadime	28	Technician Part 3	Technician	Computer Programming and maintenance	
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

1.6 Established No. of Technical Staff by Designation and No. of Positions filled

	Chief Technician		Senior Technician		Technician		Supportive Staff	
	Est.No	No.fill.	Est.No	No.fill.	Est.No	No.fill.	Est.No	No.fill.
1990/91	0	0	0	0	1	1	0	0
1991/92	0	0	1	0	1	2	1	0
1992/93	0	0	1	0	1	2	0	1
1993/94	1		1		3		1	
1994/95	1		1		3		2	
Total*	1	-	1	-	3	-	2	-

* : No. of staff required for the ultimate consolidation of the Department

1. 3 Teaching Load (%) in Degree programmes

	1st Year						2nd Year						3rd Year						4th Year						
	1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester			
	K _r	F	K _p	K _r	F	K _p	K _r	F	K _p	K _r	F	K _p	K _r	F	K _p	K _r	F	K _p	K _r	F	K _p	K _r	F	K _p	
1990/91	58	21	21	61	7	32	57	29	14	80	7	13	0	0	0	0	0	0	0	0	0	0	0	0	0
1991/92	64	29	7	70	0	30	62	8	31	72	11	17	75	19	6	55	27	18							
1992/93	50	17	33				54	15	31				59	18	23										
1993/94																									
1994/95																									

K_r : Full-time Kenyan Staff
 K_p : Part-time Kenyan Staff
 F : Foreigners including Japanese

	5th Year						6th Year						
	1st Semester			2nd Semester			1st Semester			2nd Semester			
	K _r	F	K _p	K _r	F	K _p	K _r	F	K _p	K _r	F	K _p	
1990/91													
1991/92													
1992/93													
1993/94													
1994/95													

1. 4 Staff Mobility

	Staff appointed	Staff left within 2.5 yrs. service	Staff left after 5 yrs. service
1990/91	5	-	-
1991/92	7	-	-
1992/93	5	2	-
1993/94			
1994/95			

2. STAFF RECRUITMENT PLAN

2.4 Academic Staff

No.	DESIGNATION	SPECIALITY	1991/92 Implemented	1992/93 Implemented	1993/94 Planned	1994/95 Planned	Total*	POSSIBLE PLACES FOR RECRUITMENT (University, Private sector, etc.)
13	LECTURER	STATISTICS			2	2	4	UNIVERSITY
14	ASSISTANT LECTURER	APPLIED MATHEMATICS	1	0	1	1	3	UNIVERSITY
15	ASSISTANT LECTURER	COMPUTER SCIENCE	1	0	1	1	3	UNIVERSITY
16	ASSISTANT LECTURER	PURE MATHEMATICS	3	0	0	0	3	UNIVERSITY
17	ASSISTANT LECTURER	STATISTICS	1	0	1	1	3	UNIVERSITY
18	TEACHING ASSISTANT	APPLIED MATHEMATICS			1	1	2	UNIVERSITY
19	TEACHING ASSISTANT	COMPUTER SCIENCE		1		1	2	UNIVERSITY
20	TEACHING ASSISTANT	PURE MATHEMATICS		1	1		2	UNIVERSITY
21	TEACHING ASSISTANT	STATISTICS		1	1		2	UNIVERSITY
		RECRUIT TOTAL	7	5	19	17	48	
		ADD CURRENT PROS. STAFF	10	17	22	41	10	EXISTING STAFF, 1991
		OVERALL TOTAL	17	22	41	58	58	

* : No. planned should be indicated in a bracket.

2. STAFF RECRUITMENT PLAN

2.4 Academic Staff

No.	DESIGNATION	SPECIALITY	1991/92 Implemented	1992/93 Implemented	1993/94 Planned	1994/95 Planned	Total*	POSSIBLE PLACES FOR RECRUITMENT (University, Private sector, etc.)
1.	PROFESSOR	APPLIED MATHEMATICS			1		1	UNIVERSITY
2.	PROFESSOR	COMPUTER SCIENCE				1	1	UNIVERSITY/PRIVATE SECTOR
3.	ASSOCIATE PROFESSOR	APPLIED MATHEMATICS	1				1	
4.	ASSOCIATE PROFESSOR	PURE MATHEMATICS			1		1	UNIVERSITY
5.	ASSOCIATE PROFESSOR	STATISTICS			1		1	UNIVERSITY, PRIVATE SECTOR
6.	SENIOR LECTURER	APPLIED MATHEMATICS			1	1	2	"
7.	SENIOR LECTURER	COMPUTER SCIENCE			1	1	2	"
8.	SENIOR LECTURER	PURE MATHEMATICS			1	1	2	UNIVERSITY
9.	SENIOR LECTURER	STATISTICS			1	1	2	UNIVERSITY/PRIVATE SECTOR
10.	LECTURER	APPLIED MATHEMATICS			2	2	4	UNIVERSITY
11.	LECTURER	COMPUTER SCIENCE	1	1	1	1	4	UNIVERSITY/POLYTECHNIC/PRIVATE SECTOR
12.	LECTURER	PURE MATHEMATICS	0	0	2	2	4	UNIVERSITY

* : No. planned should be indicated in a bracket.

2. 2 Technical Staff

No.	DESIGNATION	SPECIALITY	1991/92 Implemented	1992/93 Implemented	1993/94 Planned	1994/95 Planned	Total*	POSSIBLE PLACES FOR RECRUITMENT (University, Private sector, etc.)
1.	COMPUTER TECHNICIAN	PROGRAMMING AND MAINTENANCE OF COMPUTERS	1	1	1		3	UNIVERSITY/POLY/PRIVATE SECTOR
2.	COMPUTER PROGRAMMER	WRITE PROGRAMMES			1	1	2	PRIVATE SECTOR
3.		RECRUIT TOTAL	1	1	2	1	5	
4.		ADD PROJECTED STAFF	1	2	3	5	1	EXISTING STAFF/1991
5.		TOTAL	2	3	5	6	6	
6.								
7.								
8.								
9.								
10.								
11.								
12.								
		TOTAL						

* : No. planned should be indicated in a bracket.

3 STAFF (ACADEMIC AND TECHNICAL) DEVELOPMENT PLAN USING JAPANESE FUND AND OTHER SOURCES

No	Staff (Qualification)	AREA OF STUDY	Period of JICA Technical Cooperation					TYPE OF STUDY REQUIRED
			1990	1991	1992	1993	1994	
1	MSC	FLUID MECHANICS	←	←	←	←	←	LOCAL JICA Ph.D
2	MSC	COMPUTER SCIENCE	←	←	←	←	←	LOCAL JICA Ph.D
3	MSC	AGRICULTURAL EXPERIMENTATION	←	←	←	←	←	LOCAL JICA Ph.D
4	MSC	COMPUTER SCIENCE	←	←	←	←	←	LOCAL JICA Ph.D
5	MSC	COMBINATIONS	←	←	←	←	←	Ph.D (Third Country)
6	MSC	FLUID MECHANICS	←	←	←	←	←	LOCAL JICAL Ph.D
7	MSC	FUNCTIONAL ANALYSIS	←	←	←	←	←	MOMBUSHO Ph.D
8	MSC	ABSTRACT ALGEBRA	←	←	←	←	←	Ph.D (Third Country)
9	MSC	ABSTRACT ALGEBRA	←	←	←	←	←	LOCAL JICA Ph.D
10	MSC	APPLIED MATHEMATICS	←	←	←	←	←	LOCAL JICA Ph.D
11	B.ED PGD C.S	COMPUTER SCIENCE	←	←	←	←	←	MOMBUSHO MSC
12	BSC/PGDIP C.S	COMPUTER SCIENCE	←	←	←	←	←	MOMBUSHO MSC
13	TECH PT 3	COMPUTER SCIENCE	←	←	←	←	←	MOMBUSHO TECH. TRAINING
14	TECH PT 3	COMPUTER SCIENCE	←	←	←	←	←	B TECH/BSc LOCAL
15								
16								
17								
18								
19								
20								

4. 2 LIST OF ACADEMIC ACTIVITIES

- Major Accomplishments from April, 1990 up to July, 1993

NO.	NAME OF RESEARCHER	TITLE	PUBLISHED at	DATE
RESEARCH PUBLICATIONS				
1.	Prof. S.M. Uppal	'Rinsler Spaces' - Ph. D thesis	via various journals	August 1992 award
2.	"	'Decomposition of Recurrent projective Curvature Tensor Field	Academy of Progress of Mathematics BHV VARANASI INDIA	Vol 25 No 1 and 2 Nov '91
3.	"	'Some representations of Unified Voigt Functions	'Astrophysics and Space Science Manchester UK	Vol 1888 P 1-8, 1992
4.	"	'Generalisation of Gauss-Codazzi Equations for Relative Curvature Tensor'	'Academy of Progress of Mathematics' VARANASI, INDIA	July 1992
5.	"	'Veblen Identities and their Equivalence for Projective Curvature Tensor'	'to Prof. J. Eells ICTP, ITALY	June, 1992
6.	"	'Veblen Identities and their Equivalence in Special Kawaguchi Space'	to Journal of Indian Mathematical Society	June 1992
7.				
8.				
9.				
SEMINAR				
1.	John M. Wekesa	Kenya's Population Projection and some of their implications to Education Planning	Silver Springs Hotel, Nairobi	28/2/91
2.	John K. Omurundu	Mathematics in Population - (African Congress of Mathematicians International)	KICC, Nairobi	20-28/1/91
3.	Dr. G.X. Stover	Modelling in Fluid Mechanics, Faculty of Science Seminar	JKUCAT	June, 1991
4.	H.K. Humphreys	'Three into two won't go' - Problems of Timetabling in the Faculty of Science	JKUCAT	May, 1991
5.	Mr. Y. Ono, Miss L. Gatharia and Mr. C. Maloba	Organised 9/9/91 with Dean, Faculty of Science and Lectures from University Hands on Computing for Top Management in JKUCAT	JKUCAT	9/9/91

4. ACADEMIC ACTIVITIES
4.1 RESEARCH POLICY

<p><u>1. Objectives</u> Use of good computing facilities to aid research</p> <p><u>2. Areas of Priority</u> Fluid Mechanics, Computer Science, statistics, Functional Analysis, Number Theory, Algebraic Structures, Riemannian Geometry.</p> <p><u>3. Strategies</u> Collaborate with colleagues who have a similar interest, also with other departments in the Faculties of Science, Agriculture and Engineering.</p>	<p><u>4. Possible research to be undertaken</u> Specific areas identified by staff include Fluid Mechanics, Sample Survey, Estimation, Computer Science, Functional Analysis, Number Theory, Algebraic Structures, Riemannian Geometry.</p> <p><u>5. Requirements for the implementation</u> Funds for travel and subsistence Stationery Computer facilities for staff Access to scientific journals.</p>
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4.2A

SEMINARS

16. A. Madahana

17. H.M. Humphreys

18. Prof. S.M. Uppal
(editor H.M. Humphreys)

Workshop - Computers in Social Science Nairobi
5-16/July, 1993

Text Book
Secondary School Mathematics Book 3
(Heinemann) of series of four - January 1991

Text Book: Revision Test Papers in Mathematics
for KCSE (JKF) November, 1992

4.2A

SEMINAR

6. Mr. Y. Ono, Miss L. Gatharia, Mr. C. Maloba, Mr. J. Macharia
Dr. Kangethe (Electrical Department)

7. John M. Wekesa

8. John M. Wekesa

9. John M. Wekesa

10. Loise W. Gatharia

11. Prof. Zensho Nakao

12. S.J. Okoach

13. S.J. Okoach

14. S.J. Okech

15. A. Madahana

Organised 2-6/12/91 with Dean, Faculty of Science, to teach a 25 hour seminar in 'Hands on Computing (DOS, Wordperfect, Lotus 1-2-3) to academic staff in the Faculty of Science, JKUCAT

Demographic transition of population in Western Province, with special emphasis to Burgoma and Busia Districts. AT regional symposium on Ecological and Cultural change and human development in Western Province - Golf Hotel, Kakamega 5-8/8/92

1. The use of the Gompertz relational model in fertility estimation vis-a-vis Coale-Trussel model
2. Logit systems of model life tables: A comparative view - University of Nairobi, Kenya Mathematical Society conference supported by UNESCO, 19-21/8/92

Effects of Socio-cultural factors on population dynamics - short course for health workers, social workers from NGO's supported by UNDP, Gigiri, 24-6/9/92

Rice production trend in the main irrigation schemes in Kenya (with J. Wambua Kalui, Agric. Eng., Mechanization of rice farming in Kenya, JKUCAT, 26-27/11/91

Analysis of Parallel Algorithms in ADA: Examples and simulations: Maths and Computer Science Seminar, JKUCAT 5/11/92

National Training Workshop on use of Computers in Research and Management, KIRDI, Nairobi 4-20/Jan 1993

Seminar on Advanced Computer Science, Kyoto School of Computer Science, Japan 12-28/Feb 1993

Paper 'Cultural Determinants of Software Development in Africa, African Studies Association of South Africa, Johannesburg'

Workshop on World Bank Phase II Grants to JKUCAT - to determine specifications and quantities for computers to be provided to all relevant departments in JKUCAT - Nairobi March - May 1993

4. 3 LIST OF CURRENT RESEARCH PROGRAMMES

NO.	NAME OF RESEARCHER	TITLE OF RESEARCH	PUBLISHED OR NOT	SOURCE OF FUND
1.	Prof. S.M. Uppal	'On Hypersurface of Finsler space II'	to Bulletin of Pure and Applied Science MODINAGAR, UP INDIA for referees	Self
2.	Prof. S.M. Uppal	'Generalised Recurrent Finsler space of Second Order II'	to Rivista Di Matematica, Della universita Di Parma PARMA, ITALY for referees	Self
3.	Kepher H. Mahambi	Robust Variance Estimation in Finite population	No	Awaiting source
4.	Loise W. Gatharia	The Role of Women in Technical Ed. in conjunction with Professor Maranga, Dean of Engineering)	No	World Bank
5.	Mathew Kinyanjui	Magneto - Hydro - Dynamics	No	JICA
6.	Moses Muchina	Agricultural Experimentation on yields of crops planted in varied conditions (with Dr. Kasembe of Biological Sciences)	No	World Bank
7.	Okech S. Juma	Computer Science	No	JICA
8.	Odhambo Romanus O.	Sample Surveys	No	DAAD
9.	Wekesa John M.	African Population Survey Programme	No	UN POPULATION FUND
10.	Kibaru Francis N.	Functional Analysis	No	Mombusho ?

4. 4 AREA OF RESEARCH INTERESTED BY STAFF

Page:

NO.	FIELD	MAIN TITLE (Long Term Research)	NAME	SUB TITLE
1	APPLIED MATHEMATICS	RIEMANNIAN GEOMETRY Magneto-Hydro-Dynamics	PROF. S.M. UPPAL Mathew Kinyanjui	Gauss-Codazzi Equations, Voigt Functions, Veblen Identities Solutions of Partial Differential Equations representing magneto-hydro-dynamic flow
2	STATISTICS	Theory of Estimation Design of Experiments Sampling Population Studies	K.H. Mahambi N.N. Muchina R.O. Odhiambo J.M. Wekesa	Robust variance Estimation in Finite Population Variations in crop yields Sample Surveys African Population Survey
3.	COMPUTER SCIENCE	Women in Technology Computers in Research and Management	L.W. Gatharia S.J. Okech	Use of Computer in recording findings on role of women in technology Development of Computers with special relevance to Africa
4	PURE MATHEMATICS	Functional Analysis	F.N. Kibaru	Extensions of Banach's theorem on to - Reversible and F - reversible Matrices

4. 5 Publications and Papers presented out of Research Activities

	No. of Research undertaken	No. of Staff involved			No. of Publications	No. of Papers presented	No. of Research per Staff per Year
		K	J	Total			
1990/91	5*	5	0	5	3	4	0.36
1991/92	3	3	0	3	3	1	0.17
1992/93	9 ⁺	3	0	3	7	5	0.32
1993/94							
1994/95							
TOTAL	17	11	0	11	13	10	0.24

K : Keryan staff including those on overseas contract
 J : Japanese staff
 *including PG Dip and MSc Thesis
 +including MSc Thesis and PhD Thesis

No. of Research per staff per year is expressed as No. of Research undertaken divided by all academic staff excluding those who are on study leave in a department in that particular year.
 No. of Staff involved may count the same staff repeatedly.

4. 6 Participation of SEMINAR/WORKSHOP/CONFERENCE

	No. of Staff participated			No. of Papers presented	No. of Papers presented per Staff per Year	No. of Papers published out of Seminar/Workshop	No. of Seminars/Workshop per Staff per Year
	K	J	Total				
1990/91	6	0	6	5	0.33	3	0.17
1991/92	8	2	10	8	0.45	2	0.11
1992/93	13	1	14	7	0.50	6	0.27
1993/94							
1994/95							
TOTAL	27	3	30	20	0.37	11	0.20

4. 7 Total Publications and Papers presented

	No. of Publications	No. of Papers presented	No. of Publications per Staff per Year	No. of Papers presented per Staff per Year
1990/91	3	9	0.21	0.64
1991/92	3	9	0.17	0.50
1992/93	7	12	0.32	0.55
1993/94				
1994/95				
TOTAL	13	30	0.24	0.56

No. of Publication in 4. 7 is equal to the sum of No. of Publications in 4. 5, and 4. 6.
 No. of Papers presented in 4. 7 is equal to the sum of No. of Papers presented in 4. 5, and 4. 6.
 No. of Publications per staff per year in 4. 7 is expressed as No. of Publications in 4. 7 divided by total academic staff in a department in that particular year.
 No. of Papers presented per staff per year in 4. 7 is expressed as No. of Papers presented in 4. 7 divided by total academic staff in a department in that particular year.

4. 8 Seminar/Workshop/Conference organized by Department

	No. of Seminar/Workshop organized by Department		
	Internal	Public	Total
1990/91	4*	0	4
1991/92	2	0	2
1992/93	2	0	2
1993/94			
1994/95			
TOTAL	8	0	8

* 3 in Faculty of Science

4. 9 Textbook/Manual published

	No. of Staff involved			No. of Books published	No. of books published per Staff per Year
	K	J	Total		
1990/91	1	0	1	1	0.07
1991/92	0	0	0	0	0.00
1992/93	2	0	2	1	0.09
1993/94					
1994/95					
Total	3	0	3	2	0.04

No. of books published per staff per year is expressed as No. of books published divided by total academic staff in that particular year.

6. JAPANESE INPUT

6. 1 Despatch of Experts

	Experts required for 1994/95		Time and Duration	Nature of Assignment
	Area of Specialization	Total		
1.				
2.				
3.				
4.				
5.				
	Long Term (Man-Month)	Short Term (Man-Month)		Total
1990/91	1 (12)	0		1
1991/92	1 (12)	0		1
1992/93	1 (12)	1 (6)		2
1993/94				
1994/95				
Total	3	1		4

6. 2 Training and Scholarship

	C/P	JICA			Japanese Govt. (Mombusho)	Total
		3rd	Group	Local		
1990/91	0	0	0	0	0	0
1991/92	1	0	0	1	2	2
1992/93	0	0	0	2	2	2
1993/94						
1994/95						
Total	1	0	0	3	4	4

No. of staff who are still in Japan should be indicated in bracket.

6. 3 Distribution of degrees awarded

	Degree awarded				
	Ph. D.	M. Sc.	B. Sc.	Others	Total
1990/91					
1991/92			67		67
1992/93					
1993/94					
1994/95					
Total					

6. 4 MACHINERY AND EQUIPMENT FOR FISCAL YEAR 1990 - 1994

Page: _____

DEPARTMENT	1990/91	1991/92	1992/93	1993/94	1994/95
Equipment provided or to be expected	23 IBM Pcs. 6 Printers 6 X-Y Plotters 50 Boxes Mathematical Models	8 IBM Pcs 2 Printers			

6. 5 JICA Local Cost (K.Shs.)

	Local Research	Textbook/Manual	Exchange Prog.	Seminar	Others	Total
1990/91						
1991/92						
1992/93						
1993/94						
1994/95 (planned)						
Total						

7. Local Cost by Kenyan Government (K. Shs.) Page: _____

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Encliment	Miscellaneous	Total
1990/91									
1991/92									
1992/93									
1993/94									
1994/95									
Total									

8. I GU / PRODUCTION UNIT

1. Name of Unit : _____

2. Description of Activities :

3. Staff and Organization

4. Balance Sheet in 1992/93

JOMO KENYATTA UNIVERSITY COLLEGE OF AGRICULTURE AND TECHNOLOGY

(UNDERGRADUATE PROGRAMME) PROJECT

COMPILED INFORMATION FOR IICA MISSION

FACULTY OF

SCIENCE.

DEPARTMENT OF

BIOLOGICAL SCIENCES.

JULY, 1993

Contents

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6.2	Training and Scholarship
6.3	Distribution of Degree awarded
6.4	Machinery and Equipment
6.5	Local cost
7.	Local Cost by Kenyan Government
8.	Production Unit

1. STAFF LIST (as of 31st July, 1993)
Academic Staff

BOTANY

Page: _____

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO BE COVERED IN SYLLABUS FOR B.Sc. *	Year/Date of Appointment	Year/Date of Resignation
1	Miss V.W. NGUMI		B.Ed (Sc) MSc (Botany)	LECTURER	PLANT PHYSIOLOGY			
2	Dr. J.N.R. KASEMBE		BSc MSc Ph.D	SENIOR LECT.	PLANT BREEDING			
3	Mr. J.M. MBERIA		BEd (Sc) M.Ed (Bio. Genetics)	LECTURER	BIO GENETICS			
4	Mrs. E. OMIRO		B Ed (Sc) MSc (Plant Taxonomy)	ASSISTANT LECTURER	PLANT TAXONOMY			
5	Mr. M.N. MAKUBE		B. Ed (Sc) MSc	"	PLANT PHYSIOLOGY			
6	Mr. G. NJIROGE		BEd (Sc) MSc	"	PLANT TAXONOMY			
7	Mr. J. OCHOKA	34	B. Ed (Sc) MSc	"	MORPHOGENESIS DEV. ANATOMY			
8	Mrs. KIMANTHI		BSc MSc	"	MYCOLOGY			
9	Mrs. S. OKOTH		BEd (Sc) MSc: Mycology	ASSISTANT LECTURER	LEFT.			
10	Mrs. C. GITHWJI		B. Ed (Sc) MSc (Plant Taxonomy)	ASSISTANT LECTURER	LEFT.			
11	Mr. A.T. MUGAI		BEd (Sc) MSc	TEACHING ASSISTANT	CYTOGENESIS GENETICS			
12	Miss MATIRU		B. Ed (Sc) MSc	ASSISTANT LECTURER	PLANT PATHOLOGY			
13								
14								
15								

1. 2 Established No. of Academic Staff by Designation and No. of Positions filled

	Prof.			Ass. Prof.			S.L.			L.			Asst. L.			Teaching Asst.		
	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance
1990/91	1	0	1	1	0	1	2	0	2	4	4	0	4	3	0	4	1	3
1991/92	1	0	1	1	0	1	3	1	2	9	4	5	8	3	5	6	1	5
1992/93	1	0	1	2	0	2	6	1	5	12	6	6	12	5	7	10	6	4
1993/94	1			2			3			12			8			5		
1994/95	1			2			4			12			8			5		
Total*	1	-	-	2	-	-	4	-	-	12	-	-	8	-	-	5	-	-

* : No. of staff required for the ultimate consolidation of the Department.

1. STAFF LIST (as of 31st July, 1993)
Academic Staff

Page: _____

BIOCHEMISTRY

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO BE COVERED IN SYLLABUS FOR B.Sc.	Year/Date of Appointment	Year/Date of Resignation
1	V. NYAMBATI		BSc MSc Ph.D (Biochem)	LECTURER	Biochemistry / Immunology			
2	M. WAMUNYO KOLI		BSc MSc (Biochemistry)	ASSISTANT LECT.	Biochemistry / Molecular Biology			
3	M. D. W. M. KAZIUKI	33	BSc MSc (Biochemistry)	ASSISTANT LECT	IMMUNOCHEMISTRY / MOLECULAR BIO			
4	MISS MAGIRI	26	BSc MSc (Biochemistry)	ASSISTANT LECT.	BIOCHEMICAL INVESTIGATION / METABOLISM / MOLECULAR BIO			
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

1. 2 Established No. of Academic Staff by Designation and No. of Positions filled

	Prof.			Ass. Prof.			S.L.			L.			Asst. L.			Teaching Asst.		
	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance
1990/91	1	0	1	1	0	1	2	0	2	4	0	4	3	0	4	1	3	
1991/92	1	0	1	1	0	1	3	1	2	9	5	4	3	5	6	1	5	
1992/93	1	0	1	2	0	2	6	1	5	12	6	6	5	7	10	6	4	
1993/94	1			2			3		8				8		4			
1994/95	1			2			4		12				8		4			
Tota	1	-	-	2	-	-	4	-	12	-	-	-	8	-	4	-	-	

* : No. of staff required for the ultimate consolidation of the Department.

1. STAFF LIST (as of 31st July, 1993)
Academic Staff

ZOOLOGY

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO BE COVERED IN SYLLABUS FOR B.Sc.	Year/Date of Appointment	Year/Date of Resignation
1	M. E. MWANGI		BSc. MSc (zoology)	LECTURER	POPULATION ECOLOGY			
2	Miss. P. MBUGHO		B.Ed (sc) MSc (zoology)	LECTURER	CELL BIOLOGY			
3	Mr. D. B. MUTORO		BSc. MEd (zoology)	LECTURER	FISH BIOLOGY / FISHERIES			
4	Mrs. H. KUTIMA		B.Ed (sc) MSc	ASSISTANT LECTURER	PARASITOLOGY			
5	Mr. SHILILU		B.Ed (sc) MSc	ASSISTANT LECTURER	GENERAL ZOOLOGY / PSYCHOLOGY			
6	Mr. NYANGOTO		BSc MSc	TEACHING ASSISTANT	CELL BIOLOGY			
7	Ms. MARANGA		B.Ed (sc) MSc	ASSISTANT LECTURER	ENTOMOLOGY			
8	Mrs. MZENGA	32	B.Ed (sc) MSc	TEACHING ASSISTANT	AQUATIC B/W HYDROBIOLOGY			
9								
10								
11								
12								
13								
14								
15								

2. Established No. of Academic Staff by Designation and No. of Positions filled

Year	Prof.			Ass. Prof.			S.L.			L			Asst. L.			Teaching Asst.		
	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance
1992	1	0	1	1	0	1	2	0	2	4	4	0	4	3	0	4	1	3
1993	1	0	1	1	0	1	3	1	2	9	4	5	8	3	5	6	1	5
1994	1	0	1	2	0	2	6	1	5	12	6	6	12	5	7	10	6	4
1995	1			2			3			8			8			4		
1996	1			2			4			12			8			4		
Total	1	-	-	2	-	-	4	-	-	12	-	-	8	-	-	4	-	-

* No. of staff required for the ultimate consolidation of the Department.

1. 3 Teaching Load (%) in Degree programmes

	1st Year						2nd Year						3rd Year						4th Year							
	1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester				
	K _F	F	K _P	K _F	F	K _P	K _F	F	K _P	K _F	F	K _P	K _F	F	K _P	K _F	F	K _P	K _F	F	K _P	K _F	F			
1990/91																										
1991/92																										
1992/93																										
1993/94																										
1994/95																										

K_F : Full-time Kenyan Staff
 K_P : Part-time Kenyan Staff
 F : Foreigners including Japanese

	5th Year						6th Year																				
	1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester											
	K _F	F	K _P	K _F	F	K _P	K _F	F	K _P	K _F	F	K _P	K _F	F	K _P	K _F	F										
1990/91																											
1991/92																											
1992/93																											
1993/94																											
1994/95																											

1. 4 Staff Mobility

	Staff appointed	Staff left after 2.5 yrs. service	Staff left after 5 yrs. service
1990/91		-	-
1991/92		-	-
1992/93		-	-
1993/94		-	-
1994/95		-	-

1. 5 Technical Staff

Page:

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	REMARKS/REQUIRED FOR
1	J.N. GACHANJA	40	B.LT, HND, EDDP, FIST, SEN. TECH.	SEN. TECH.	ZOOLOGY/BIOCHEMISTRY	TO BE PROMOTED TO CHIEF TECHNICIAN
2	P.N. NJORGE	N/A	SLT I, SLT II	SEN. TECH.	BOTANY	DISMISSED
3	P.O. EGALA	N/A	0" DIP. APPLIED BIO	TECHNICIAN	ZOOLOGY	DISMISSED
4	P.C. OTIENO	25	0" D.P. HND	TECHNICIAN	BOTANY	TO BE PROMOTED TO SEN. TECHNICIAN
5	J.K. MUTIA	30	0" D.P. HND MED. TECH.	TECHNICIAN	ZOOLOGY/BIOCHEMISTRY	TO BE PROMOTED TO SEN. TECHNICIAN
6	P. MAINA	26	0" D.P. APPLIED BIO	TECHNICIAN	BOTANY	NEWLY EMPLOYED
7	MARY ALUNGA	34	0" D.P. APPLIED BIO	TECHNICIAN	BOTANY	"
8	F.O. ODHARE	N/A	0" DIP. MED. LAB. TECH.	TECHNICIAN	ZOOLOGY	DESERTED
9	P.N. OCHIENG	26	0" D.P. APPLIED BIO	LAB ATT. IV	BIOCHEMISTRY	NEWLY EMPLOYED
10	M. KIBEGWA	21	KCSE	LAB ATT. I	ANIMAL HOUSE/BOTANICAL ATTENDANCE	SUPPORTING STAFF
11	E. CHEPKERH	24	KCE	LAB. ATT. I	"	"
12	B. AUMA	24	KCPE STANDARD	LAB ATT. I	"	"
13	M. NDOGO	30	KCE, DIP. MED. LAB. TECH.	COPY TYPIST II	COPY TYPING	"
14	M. H. KAMAU	37	PACE	MESSENGER/SURVEILLANCE	MESSENGERIAL DUTIES	"
15	J. MUTHANGA	29	KCE	" I	"	"

1. 6 Established No. of Technical Staff by Designation and No. of Positions filled

	Chief Technician		Senior Technician		Technician		Subordinate staff	
	Est. No	No. fill.	Est. No	No. fill.	Est. No	No. fill.	Est. No	No. fill.
1990/91	1	0	2	2	4	3	1	6
1991/92	0	0	3	2	4	3	1	6
1992/93	1	0	5	2	8	2	6	9
1993/94	2	0	9	1	16	4	12	30
1994/95	3	0	10	1	18	4	14	37
Total*	3	-	10	-	18	-	-	39

* : No. of staff required for the ultimate consolidation of the Department

2. STAFF RECRUITMENT PLAN

2.2 Academic Staff

No.	DESIGNATION	SPECIALITY	1991/92 Implemented	1992/93 Implemented	1993/94 Planned	1994/95 Planned	Total*	POSSIBLE PLACES FOR RECRUITMENT (University, Private sector, etc.)
1.	PROFESSOR	ZOOLOGY	0	0	(1)	1		
		BOTANY	1	1	1	1	3	from the Universities
		BIOCHEMISTRY	0	0	(1)	1		
		ZOOLOGY	0	1	2 (1)	2		
		BOTANY	0	0	2 (1)	2		
2.	ASSOCIATE PROFESSOR	BIOCHEMISTRY	0	0	(1)	2 (1)	6	from the Universities
		ZOOLOGY	0	2	3 (1)	4 (1)		
		BOTANY	1	2	3 (1)	4 (1)	12	from the Universities
3.	SENIOR LECTURER	BIOCHEMISTRY	1	2	3 (1)	4 (1)		
		ZOOLOGY	3	4	8 (4)	12 (4)		
		BOTANY	3	4	8 (4)	12 (4)	36	from University/Research
4.	LECTURER	ZOOLOGY	3	4	8	8		
		BOTANY	3	4	8	8		
		BIOCHEMISTRY	2	4	8	8	24	from UNIVERSITY Universities/Research
5.	ASSISTANT LECTURER	ZOOLOGY	2	4	8	8		
		BOTANY	NIL	NIL	NIL	(1)		
		BIOCHEMISTRY	NIL	NIL	NIL	(1)		
6.	TUTORIAL FELLOW	BOTANY	2	4	4	4	3	
		ZOOLOGY	2	4	4	4		
7.	TEACHING ASSISTANT	BOTANY	2	5 (2)	5	5	12	
		BIOCHEMISTRY	1	3	3	3		
8.							96	
9.								
10.								
11.								
12.								

* : No. planned should be indicated in a bracket.

3. STAFF (ACADEMIC AND TECHNICAL) DEVELOPMENT PLAN USING JAPANESE FUND AND OTHER SOURCES Page: _____

No	Staff (Qualification)	AREA OF STUDY	Period of JICA Technical Cooperation					TYPE OF STUDY REQUIRED
			1990	1991	1992	1993	1994	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

2. 2 Technical Staff

No.	DESIGNATION	SPECIALITY	1991/92 Implemented	1992/93 Implemented	1993/94 Planned	1994/95 Planned	Total*	POSSIBLE PLACES FOR RECRUITMENT (University, Private sector, etc.)
1.	CHIEF TECHNICIAN	ZOOLOGY	0	1	1	1		promote Sen. Tech.
		BOTANY	0	0	(4)	1		"
		BIOCHEMISTRY	0	0	0	(1)	3	"
2.	SENIOR TECHNICIAN	ZOOLOGY	1	2	4(2)	4		promote Technicians
		BOTANY	1	1	4(2)	4		"
		BIOCHEMISTRY	1	1	2(1)	2(1)	10	"
3.	TECHNICIAN A/B	ZOOLOGY	2	3	6(3)	6		from Universities, research and polytechnics
		BOTANY	2	3	6(3)	6		"
		BIOCHEMISTRY	1	2	4(2)	6(2)	18	"
4.	JUNIOR TECHNICIAN	ZOOLOGY	0	1	2(1)	3(1)		"
		BOTANY	0	1	2(1)	3(1)	9	"
		BIOCHEMISTRY	0	1	2(1)	3(1)		"
5.	LAB ATTENDANT IV	ZOOLOGY	0	0	0	0		"
		BOTANY	0	0	0	0		"
		BIOCHEMISTRY	0	1	0	0	0	"
6.	LAB ASSISTANT II	ZOOLOGY	1	NIL	(1)	2(1)		"
		BOTANY	1	NIL	(1)	2(1)		"
		BIOCHEMISTRY	1	NIL	(1)	2(1)	6	"
7.	LAB ATTENDANT II	ZOOLOGY	NIL	NIL	(1)	1		"
		BOTANY	NIL	NIL	(1)	1		"
		BIOCHEMISTRY	NIL	NIL	(1)	1	3	"
8.	LAB ATTENDANT I	ZOOLOGY	0	1	1	2(1)		"
		BOTANY	0	1	1	2(1)		"
		BIOCHEMISTRY	0	1	1	2(1)	6	"
9.	SECRETARY A/B	ZOOLOGY	ONE	ONE	1	1		from Universities, private sector
		BOTANY	ONE	ONE	(1)	(1)	3	"
		BIOCHEMISTRY	ONE	ONE	(1)	(1)		"
10.	COPY TYPIST IV	ZOOLOGY	NIL	NIL	(1)	1		"
		BOTANY	NIL	NIL	(1)	1		"
		BIOCHEMISTRY	NIL	NIL	(1)	1	3	"
11.	COPY TYPIST II	ZOOLOGY	ONE	ONE	1	1		"
		BOTANY	ONE	ONE	(1)	(1)	3	"
		BIOCHEMISTRY	ONE	ONE	(1)	(1)		"
12.	MESSENGER II	ZOOLOGY	ONE	ONE	1	1		"
		BOTANY	ONE	ONE	(1)	(1)	3	"
		BIOCHEMISTRY	ONE	ONE	(1)	(1)		"
13.	MESSENGER I	ZOOLOGY	NIL	TWO	1	1		"
		BOTANY	NIL	TWO	1	1	3	"
		BIOCHEMISTRY	NIL	TWO	1	1		"
		TOTAL	13	27	57	70	70	

* : No. planned should be indicated in a bracket.

4. ACADEMIC ACTIVITIES
1. RESEARCH POLICY

Page: _____

<p><u>1. Objectives</u></p> <p><u>2. Areas of Priority</u></p> <p><u>3. Strategies</u></p>	<p><u>4. Possible research to be undertaken</u></p> <p><u>5. Requirements for the implementation</u></p>
--	--

1.2 LIST OF ACADEMIC ACTIVITIES

- Major Accomplishments from April 1980 up to _____

NO.	NAME OF RESEARCHER	TITLE	PUBLISHED at	DATE
RESEARCH ACTIVITIES				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
SEMINAR				
1.				
2.				
3.				
4.				
5.				

4 AREA OF RESEARCH INTERESTED BY STAFF

NO.	FIELD	MAIN TITLE (Long Term Research)	NAME	SUB TITLE

4.3 LIST OF CURRENT RESEARCH PROGRAMMES

NO.	NAME OF RESEARCHER	TITLE OF RESEARCH	PUBLISHED OR NOT	SOURCE OF FUND
1.				
2.				
3.				
4.				
5.				

4. 7 Total Publications and Papers presented.

	No. of Publications	No. of Papers presented	No. of Publications per Staff per Year	No. of Papers presented per Staff per Year
1990/91				
1991/92				
1992/93				
1993/94				
1994/95				
TOTAL				

No. of Publication in 4. 7 is equal to the sum of No. of Publications in 4. 5, and 4. 6.
 No. of Papers presented in 4. 7 is equal to the sum of No. of Papers presented in 4. 5, and 4. 6.
 No. of Publications per staff per year in 4. 7 is expressed as No. of Publications in 4. 7 divided by total academic staff in a department in that particular year.
 No. of Papers presented per staff per year in 4. 7 is expressed as No. of Papers presented in 4. 7 divided by total academic staff in a department in that particular year.

4. 8 Seminar/Workshop/Conference organized by Department

	No. of Seminar/Workshop organized by Department		
	Internal	Public	Total
1990/91			
1991/92			
1992/93			
1993/94			
1994/95			
TOTAL			

4. 9 Textbook/Manual published.

	No. of Staff involved			No. of Books published	No. of books published per Staff per Year
	K	J	Total		
1990/91					
1991/92					
1992/93					
1993/94					
1994/95					
Total					

No. of books published per staff per year is expressed as No. of books published divided by total academic staff in that particular year.

1. 5 Publications and Papers presented out of Research Activities

	No. of Research undertaken	No. of Staff involved		No. of Publications	No. of Papers presented	No. of Research per Staff per Year
		K	J			
1990/91						
1991/92						
1992/93						
1993/94						
1994/95						
TOTAL						

K : Kenyan staff
J : Japanese staff

No. of Research per staff per year is expressed as No. of Research undertaken divided by all academic staff excluding those who are on study leave in a department in that particular year. No. of Staff involved may count the same staff repeatedly.

4. 6 Participation of SEMINAR/WORKSHOP/CONFERENCE

	No. of Staff participated		No. of Papers presented	No. of Papers published out of Seminar per Staff per Year	No. of Papers published out of Seminar/Workshop	No. of Papers published out of Seminar/Workshop per staff per Year	No. of Seminar/Workshop per Staff per Year
	K	J					
1990/91							
1991/92							
1992/93							
1993/94							
1994/95							
TOTAL							

	No. of Students admitted			No. of Students present			No. of Students proceeded to the following year			Grade of Graduates				No. of Graduates employed/ on the Job						
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	A	B	Pass	F	M	F	Total	
1990/91																				
1991/92																				
1992/93																				
1993/94																				
1994/95																				
TOTAL																				

Pass Rate (%) = No. of students proceeded to the following year divided by No. of students present x 100

5. 2 Diploma Programme

	1990/91	1991/92	1992/93	1993/94	1994/94	Total
1st						
2nd						
3rd						
TOTAL						

6. JAPANESE INPUT

6. 1 Despatch of Experts

	Experts required for 1994/95		Nature of Assignment
	Area of Specialization	Time and Duration	
1.			
2.			
3.			
4.			
5.			
Total			

6. 2 Training and Scholarship

	JICA				Japanese Govt. (Mombusho)	Total
	C/P	3rd	Group	Local		
1990/91						
1991/92						
1992/93						
1993/94						
1994/95						
Total						

No. of staff who are still in Japan should be indicated in bracket.

6. 3 Distribution of degrees awarded

	Degree awarded				Total
	Ph.D.	M.Sc.	B.Sc.	Others	
1990/91					
1991/92					
1992/93					
1993/94					
1994/95					
Total					

DEPARTMENT	1990/91	1991/92	1992/93	1993/94	1994/95
<p>BIOLOGICAL SCIENCES. Equipment provided or to be expected.</p>	<p>EQUIPMENTS PROVIDED:</p> <ol style="list-style-type: none"> 1. Centrifuge - ③ 2. Laboratory Balance ① 3. Refrigerator ① 4. Water distilling Apparatus ① 5. Electronic Top Pan Balance ③ 6. Biological Microscope ① 7. Stereo Microscope dissecting ⑥ 8. Freezer ① 9. Incubator ② 10. Oven Incubator ① 	<p>EQUIPMENTS PROVIDED:</p> <ol style="list-style-type: none"> 1. Autoclave ① 2. Differential Interference Contrast Microscope ① 3. Microscope ② 4. Photometer ① 5. Vacuum pump ① 6. Balance ① 7. Balance ② 			

5 JICA Local Cost (K.Shs.)

	Local Research	Textbook/Manual	Exchange Prog.	Seminar	Others	Total
1990/91						
1991/92						
1992/93						
1993/94						
1994/95 (planned)						
Total						

7. Local Cost by Kenyan Government (K. Shs.)

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Emolument	Miscellaneous	Total
1990/91									
1991/92									
1992/93									
1993/94									
1994/95									
Total									

8. I GU/PRODUCTION UNIT

1. Name of Unit : _____
2. Description of Activities :

3. Staff and Organization

4. Balance Sheet in 1992/93

JOMO KENYATTA UNIVERSITY COLLEGE OF AGRICULTURE AND TECHNOLOGY
(UNDERGRADUATE PROGRAMME) PROJECT

COMPILED INFORMATION FOR JICA MISSION

FACULTY OF

SCIENCE

DEPARTMENT OF

PHYSICAL SCIENCES

JULY, 1993

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1. STAFF LIST (as of 31st July, 1993)
1.1 Academic Staff

Page: _____

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO BE COVERED IN SYLLABUS FOR B.Sc. *	Year/Date of Appointment	Year/Date of Resignation
1	Prof. J.M. Ndombi		Ph.D	Professor	Geophysics			
2	Prof. F. Kaberia		Ph.D	Assoc. Professor	Organic Stereochemistry			
3	Dr. J.S. Chacha		Ph.D	Senior Lecturer	Physical Chemistry			
4	Dr. W. N. Njue		Ph.D.	Senior Lecturer	Organic chemistry			
5	Mr. Waudo W.		MSC	Lecturer	Physical Chemistry			
6	Mr. J. A. Mwanjil		MSC	Lecturer	Quantum Physics			
7	Mr. G. T. Thuku		MSC	Lecturer	Organic Chemistry			
8	Mr. O. O. Anam		MSC	Lecturer	Analytical Chemistry			
9	Mr. J. M. Gikonyo		MSC	Lecturer	Inorganic Chemistry			
10	Mr. S. Kariuki		MSC	Lecturer	Organic Chemistry			
11	Mr. J. M. Keriko		MSC	Lecturer	Organic Chemistry			
12	Mr. P. N. Githira		MSC	Lecturer	Analytical Chemistry			
13	Mr. D.M. Mulati		MSC	Lecturer	Physics of Materials			
14	Mr. M. Okwado		MSC	Assistant Lecturer	Inorganic chemistry			
15	Mr. J. K. Kariuki		MSC	Asst. Lecturer	Organic Chemistry			

1.2 Established No. of Academic Staff by Designation and No. of Positions filled

	Prof.			Ass. Prof.			S.L.			L.			Asst. L.			Teaching Asst.		
	Est.No	No. fill.	Balance	Est.No	No. fill.	Balance	Est.No	No. fill.	Balance	Est.No	No. fill.	Balance	Est.No	No. fill.	Balance	Est.No	No. fill.	Balance
1990/91	2	1	1	4	1	3	8	0	8	15	1	15	20	4	16	12	4	8
1991/92	2	1	1	4	1	3	8	0	8	6	6	6	9	5	4	6	2	4
1992/93	2	1	1	4	1	3	8	2	6	6	6	10	12	9	3	7	4	3
1993/94	2			4			10						12			8		
1994/95	2			4			12						12			8		
Total*																		

* : No. of staff required for the ultimate consolidation of the Department.

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO BE COVERED IN SYLLABUS FOR B.Sc. *	Year/Date of Appointment	Year/Date of Resignation
16	Mr. M.O. Korowe		MSc	Asst. Lecturer	Thermal Physics			
17	Mr. N. Kamau		MSc	Ass. Lecturer	Theoretical Physics			
18	Mr. C.N. Ongeru		MSc	Ass. Lecturer	Theoretical Physics			
19	Mrs. J.M. Njenga		MSc	Ass. Lecturer	Analytical Chem.			
20	Mrs. T. Oduori		MSc	Ass. Lecturer	Organic Chemistry			
21	Mr. P.G. Kareru		MSc	Ass. Lecturer	Analytical Chem.			
22	Mr. A.M. Salin		MSc	Ass. Lecturer	Physical Chemistry			
23	Mr. G. Wangila		MSc	Ass. Lecturer	Physical Chemistry			
24	Mrs. B.M. Kamara		MSc	Ass. Lecturer	Nuclear Physics			
25	Mr. R. Kinjua		MSc	Ass. Lecturer	Electronics			
26	Mr. M.K. Tsanuo		B.Ed.	T. Assistant	Organic Chemistry			
27	Mrs. E. Omulokoli		B.Sc	T. Assistant	Organic Chemistry			
28	Mr. M.O. Onani		B.Sc	T. Assistant	Analytical Chem.			
29	Ms. M. Githua		B.Sc	T. Assistant	Environmental Chem.			
30	E. Okong'o		B.Sc	T. Assistant	Organic Chemistry			

1. 2. Established No. of Academic Staff by Designation and No. of Positions filled

	Prof.			Ass. Prof.			S.L.			L.			Astr. L.			Teaching Asst.		
	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance	Est. No	No. fill.	Balance
1980/81	2	1	1	4	1	3	8	0	8	16	1	15	20	4	16	12	4	8
1991/92	2	1	1	4	1	3	8	0	8	14	6	8	9	5	4	6	2	4
1992/93	2	1	1	4	1	3	8	2	6	16	6	10	12	9	3	7	4	3
1993/94	2			4			10			20			12			8		
1994/95	2			4			12			20			12			8		
Total*																		

* : No. of staff required for the ultimate consolidation of the Department.

2. STAFF RECRUITMENT PLAN

2.1 Academic Staff

No.	DESIGNATION	SPECIALITY	1991/92 Implemented	1992/93 Implemented	1993/94 Planned	1994/95 Planned	Total*	POSSIBLE PLACES FOR RECRUITMENT (University, Private sector, etc.)
	Prof. J.M. Ndombi	Geophysics	1	1	1 (2)			
2.	Prof. F. Kaberia	Organic Stereochemistry	1	1 (4)	1 (4)	1+? (4)		
3.	Dr. J.S. Chacha	Physical Chemistry	0 (8)	2 (8)	2+? (10)	2+? (12)		
4.	Dr. W.N. Njue	Organic Chemistry						
5.	Mr. Waudo W.	Physical Chemistry						
6.	Mr. J.A. Mwanji	Quantum Physics						
7.	Mr. G. T. Thuku	Organic Chemistry						
8.	Mr. O.O. Anan	Analytical Chemistry	5 (14)	6 (16)	6+? (20)	6+? (20)		
9.	Mr. J.M. Gikonyo	Inorganic Chemistry						
10.	Mr. D. M. Muliati	Physics of Materials						
11.	Mr. S. Kariuki	Organic Chemistry						
12.	Mr. J.M. Keriko	Organic Chemistry						

* : No. planned should be indicated in a bracket.

1. STAFF LIST (as of 31st July, 1993)
1.1 Academic Staff

Page: _____

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	SUBJECTS TO BE COVERED IN SYLLABUS FOR B.Sc.*	Year/Date of Appointment	Year/Date of Resignation
31	Mr. M. Mugweni		BSc	T. Assistant	Inorganic chemistry			
32	Mr. J. W. Muliaro		BSc	T. Assistant	Theoretical Physics			
33	Mr. P. N. Githira		MSc	Lecturer	Analytical Chemistry			
34	Mr. J. Ndeda		MSc	Lecturer	Physics			

1.2 Established No. of Academic Staff by Designation and No. of Positions filled

	Prof.		Ass. Prof.		S.L.		L		Asst. L		Teaching Asst.					
	Est. No	No. fill.	Est. No	No. fill.	Est. No	No. fill.	Est. No	No. fill.	Est. No	No. fill.	Est. No	No. fill.				
1990/91	2	1	4	1	3	8	0	8	16	1	15	20	4	16	4	8
1991/92	2	1	4	1	3	8	0	8	14	6	8	9	5	4	6	4
1992/93	2	1	4	1	3	8	2	6	16	6	10	12	9	3	7	4
1993/94	2		4			10			20			12			8	
1994/95	2		4			12			20			12			8	
Total*																

* : No. of staff required for the ultimate consolidation of the Department.

2. STAFF RECRUITMENT PLAN

2.1 Academic Staff

No.	DESIGNATION	SPECIALITY	1991/92 Implemented	1992/93 Implemented	1993/94 Planned	1994/95 Planned	Total*	POSSIBLE PLACES FOR RECRUITMENT (University, Private sector, etc.)
25	R. Kinyua	Electronics						
26	M.K. Tsanuo	Organic Chemistry						
27	E. Omilokoli	Organic Chemistry						
28	M.O. Onani	Analytical Chemistry						
29	M. Githua	Environmental Chemistry						
30	E. Okong'o	Organic chemistry	2(6)	4(7)	4+? (8)			
31	M. Mugweru	Inorganic Chemistry						
32	J.W. Muliaro	Theoretical Physics						

* No. planned should be indicated in a bracket.

2. STAFF RECRUITMENT PLAN

2.1 Academic Staff

No.	DESIGNATION	SPECIALITY	1981/82 Implemented	1982/83 Implemented	1983/84 Planned	1984/85 Planned	Total*	POSSIBLE PLACES FOR RECRUITMENT (University, Private sector, etc.)
13	Mr. P. N. Githira	Analytical Chemistry						
14	Mr. M. O. Kwado	Inorganic Chemistry						
15	Mr. J. K. Kariuki	Organic chemistry						
16	Mr. M. K. Korowe	Thermal Physics						
17	Mr. N. Kamau	Theoretical Physics						
18	Mr. C. N. Ongeri	Theoretical Physics						
19	J. M. Njenga	Analytical Chemistry						
20	Mrs. T. Odior	Organic Chemistry	9 (5)	9 (12)	9+? (12)	9+? (12)		
21	P. G. Kareru	Analytical Chemistry						
22	A. M. Salim	Physical chemistry						
23	G. Wangila	Physical Chemistry						
24	M. B. Kamara	Nuclear Physics						

* : No. planned should be indicated in a bracket.

1. 5 Technical Staff

Page: _____

No	NAME	AGE	QUALIFICATIONS	DESIGNATION	SPECIALITIES	REMARKS/REQUIRED FOR
1	Mr. W.M. Mawili			Senior Tech.		
2	Mr. F. Mugambi			Senior Tech.		
3	Mr. D. M. Kirima			Technician		
4	Mr. I. N. Nderitu			Technician		
5	Mr. W. K. Kungu			Technician		
6	Mr. W. S. Olume			Technician		
7	Mrs. E. Wambugi			Technician		
8	Mr. J. K. Njeru			Lab. Attendant		
9						
10						
11						
12						
13						
14						
15						

1. 6 Established No. of Technical Staff by Designation and No. of Positions filled

	Chief Technician		Senior Technician		Technician		Subordinate staff			
	Est.No	No.fill.	Balance	Est.No	No.fill.	Balance	Est.No	No.fill.	Balance	
1990/91	2	0	2	2	0	2	2	1	1	11
1991/92	2	0	2	4	2	2	10	8	2	11
1992/93	2	0	2	4	2	2	10	9	2	11
1993/94										
1994/95										
Total*										

* : No. of staff required for the ultimate consolidation of the Department

1.3 Teaching Load (%) in Degree programmes

	1st Year						2nd Year						3rd Year						4th Year						
	1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester			1st Semester			2nd Semester			
	K _r	K _p	F	K _r	K _p	F	K _r	K _p	F	K _r	K _p	F	K _r	K _p	F	K _r	K _p	F	K _r	K _p	F	K _r	K _p	F	
1990/91	50%	50%		50%	50%		50%	50%		50%	50%		50%	50%											
1991/92	97%	13%		87%	13%		87%	13%		87%	13%		87%	13%		87%	13%		87%	13%		87%	13%		
1992/93	90%	10%		90%	10%																				
1993/94	95%	5%		95%	5%		95%	5%		95%	5%		95%	5%		95%	5%		95%	5%		95%	5%		
1994/95	100%			100%			100%			100%			100%			100%			100%			100%			

K_r : Full-time Kenyan Staff
 K_p : Part-time Kenyan Staff
 F : Foreigners including Japanese

	5th Year						6th Year						
	1st Semester			2nd Semester			1st Semester			2nd Semester			
	K _r	K _p	F	K _r	K _p	F	K _r	K _p	F	K _r	K _p	F	
1990/91													
1991/92													
1992/93													
1993/94													
1994/95													

1.4 Staff Mobility

	Staff appointed	Staff left after 2.5 yrs. service	Staff left after 5 yrs. service
1990/91	11	1	-
1991/92	27	-	-
1992/93	34	-	-
1993/94	50	-	-
1994/95	55	-	-

3. STAFF (ACADEMIC AND TECHNICAL) DEVELOPMENT PLAN USING JAPANESE FUND AND OTHER SOURCES Page: _____

No	Staff (Qualification)	AREA OF STUDY	Period of JICA Technical Cooperation					TYPE OF STUDY REQUIRED
			1990	1991	1992	1993	1994	
1	Prof. Ndombi Prof. Kaberia Dr. J. Chacha Dr. W. Njue Mr. Waudo Mr. J. Mwanji Mr. G. Thuku Mr. O. Anan Mr. J. Gikonyo Mr. S. Kariuki Mr. J. Keriko Mr. P. Githira Mr. D. Mutati Mr. M. Okwado Mr. J. Kariuki Mr. M. Korowe Mr. N. Ngugi Mr. C. Ongeri Mrs. J. Njenga Mrs. T. Oduori Mr. P. Kareru Mr. A. Salim Mr. G. Wangila Mrs. B. M. Kamara Mr. R. Kiryua Mr. M. Tsanuo Mrs. E. Omulokoli Mr. M. Onani Ms. Githua Mr. E. Okong'o Mr. A. Mgwere Mr. J. Muliaro Mr. P. N. Githiira Mr. J. Ndeda	Geophysics Organic Stereochemistry Physical chemistry Organic chemistry Physical chemistry Quantum Physics Organic Chemistry Analytical chemistry Inorganic Chemistry Organic Chemistry Organic Chemistry Analytical Chemistry Physics of Materials Inorganic Chemistry Organic chemistry Thermal Physics Theoretical Physics Theoretical Physics Analytical Chemistry Organic Chemistry Analytical Chemistry Physical Chemistry Physical chemistry Nuclear Physics Electronics Organic Chemistry Analytical chemistry Environmental Chem. Organic Chemistry Inorganic Chemistry Theoretical Physics Analytical chemistry Physics						Counterpart Training " " " " " " Ph.D Training Ph.D Training Ph.D. Training " M.Sc Training " " " " " " " " " " " " " " " " Ph. D. Training Ph.D

2.2. Technical Staff

No.	DESIGNATION	SPECIALITY	1991/92 Implemen- ted	1992/93 Implemen- ted	1993/94 Planned	1994/95 Planned	TOTAL	POSSIBLE PLACES FOR RECRUITMENT (University, Private Sector) etc.
1.	Mr. W.M. Mawili	Physical Chemistry						
2.	Mr. F. N. Mugambi	Electronics						
3.	Mr. I. N. Nderitu	Organic chemistry						
4.	Mr. D.M. Kirina	Electronics						
5.	Mr. W. Z. Ollume	Electronics						
6.	Mr. W.K. Kungu	Organic chemistry						
7.	Ms. E. Wambugu	Inorganic chemistry						
8.	Mr. J.K. Njeru	Physical Chemistry						
		TOTAL						

*: No. planned should be indicated in a bracket.

4. 2 LIST OF ACADEMIC ACTIVITIES

- Major Accomplishments from April, 1990 up to _____

NO.	NAME OF RESEARCHER	TITLE	PUBLISHED at	DATE
	RESEARCH ACTIVITIES			
	Prof. F. Kaberia	Determination of conformation free energy in the gas phase	Bioenergetics 1, 1991	February, 1991
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9				
	SEMINAR			
1.	Prof. F. Kionira	Management information systems seminar	Sponsored by ESAMI, Arusha, Tanzania	April, 1993
2.	Prof. F. Kaberia	Kenya Chemical Society Inauguration Seminar		
3.	Dr. J. Chacha	" " " " " "		June, 1993
4.	Dr. Njue	" " " " " "		" "
5.	Mr. Robert Kiryua	Sixth International Workshop on the use of Microcomputers in Science Education in Africa.		June, 1993

4 ACADEMIC ACTIVITIES
4.1 RESEARCH POLICY

1. Objectives

Increase academic knowledge in members area of socialisation.

Utilize knowledge acquired for betterment of our people.

Energy in high quality research that will attract funds from external donors.

2. Areas of Priority

- Natural products from medicinal plants.
- Environmental chemistry.
- Geophysics
- Electrochemistry

3. Strategies

- procure needed scientific equipment
- Solicit for funds through well written research proposals.
- Offer scholarships to our best B.Sc students to do M.Sc and engage them in research.

4. Possible research to be undertaken

- Extraction and characterisation of some alkaloids that have medicinal value.
- Determine elemental levels in rivers surrounding coffee estates in Kianbu District.

5. Requirements for the implementation

- Need money to facilitate to various areas to collect research samples.
- Department requires urgently scientific equipment to carry out envisaged research.

4. 4 AREA OF RESEARCH INTERESTED BY STAFF

Page:

NO.	FIELD	MAIN TITLE (Long Term Research)	NAME	SUB TITLE
1.	Organic	Organic Stereochemistry	Prof. Kaberia	
2.	Geo-physics	Geophysics	Prof. Ndombi	
3.	Physical Chemistry	Electrochemistry	Dr. Chacha	
4.	Organic	Synthetic Organic	Dr. Njue	

4.3 LIST OF CURRENT RESEARCH PROGRAMMES

NO.	NAME OF RESEARCHER	TITLE OF RESEARCH	PUBLISHED OR NOT	SOURCE OF FUND
1.	Prof. F. Kaberia	Determination of Conformation energy (-DG°) in gas phase phase for more systems.	There has been communication	Looking for funds
2.	Prof. F. Kaberia	Extraction and characterization of some alkaloids from medicinal plants	Ph.D proposal for a member of staff.	JICA
3.	G.T. Thiong'o	Extraction and bioassay of some Kenyan Crinum Species of Amanthidaceal family.		
4.				
5.				

4. 7 Total Publications and Papers presented

	No. of Publications	No. of Papers presented	No. of Publications per Staff per Year	No. of Papers presented per Staff per Year
1990/91				
1991/92				
1992/93				
1993/94				
1994/95				
TOTAL				

No. of Publication in 4. 7 is equal to the sum of No. of Publications in 4. 5, and 4. 6.
 No. of Papers presented in 4. 7 is equal to the sum of No. of Papers presented in 4. 5, and 4. 6.
 No. of Publications per staff per year in 4. 7 is expressed as No. of Publications in 4. 7 divided by total academic staff in that particular year.
 No. of Papers presented per staff per year in 4. 7 is expressed as No. of Papers presented in 4. 7 divided by total academic staff in that particular year.

4. 8 Seminar/Workshop/Conference organized by Department

	No. of Seminar/Workshop organized by Department		
	Internal	Public	Total
1990/91			
1991/92			
1992/93			
1993/94			
1994/95			
TOTAL			

4. 9 Textbook/Manual published

	No. of Staff involved		No. of Books published	No. of books published per Staff per Year
	K	J Total		
1990/91				
1991/92				
1992/93				
1993/94				
1994/95				
Total				

No. of books published per staff per year is expressed as No. of books published divided by total academic staff in that particular year.

4. 5 Publications and Papers presented out of Research Activities

	No. of Research undertaken	No. of Staff involved			No. of Publications	No. of Papers presented	No. of Research per Staff per Year
		K	J	Total			
1990/91							
1991/92							
1992/93							
1993/94							
1994/95							
TOTAL							

K : Kenyan staff
J : Japanese staff

No. of Research per staff per year is expressed as No. of Research undertaken divided by all academic staff excluding those who are on study leave in a department in that particular year.
No. of Staff involved may count the same staff repeatedly.

4. 6 Participation of SEMINAR/WORKSHOP/CONFERENCE

	No. of Staff participated			No. of Papers presented per Staff per Year	No. of Papers published out of Seminar /Workshop per Year	No. of Seminar/Workshop per Staff per Year
	K	J	Total			
1990/91						
1991/92						
1992/93						
1993/94						
1994/95						
TOTAL						

6. JAPANESE INPUT

6. 1 Despatch of Experts

	Experts required for 1994/95		Time and Duration	Nature of Assignment
	Area of Specialization	Total		
1.				
2.				
3.				
4.				
5.				
Total				

	Long Term (Man-Month)		Short Term (Man-Month)		Total
	C/P	3rd	Local	Total	
1990/91					
1991/92					
1992/93					
1993/94					
1994/95					
Total					

6. 2 Training and Scholarship

	JICA			Japanese Govt. (Mombusho)	Total
	C/P	3rd	Local		
1990/91					
1991/92					
1992/93					
1993/94					
1994/95					
Total					

No. of staff who are still in Japan should be indicated in bracket.

6. 3 Distribution of degrees awarded

	Degree awarded			
	Ph.D.	M.Sc.	B.Sc.	Others
1990/91				
1991/92				
1992/93				
1993/94				
1994/95				
Total				

5. STATISTICS OF STUDENT : Planned No. of Student per Class : Degree Programme : _____ Diploma Programme : _____

	No. of Students admitted			No. of Students present			No. of Students proceeded to the following year			Grade of Graduates				No. of Graduates employed/ on the Job			
	M	F	Total	M	F	Total	M	F	Total	A	B	Pass	F	M	F	Total	
1990/91																	
1991/92																	
1992/93																	
1993/94																	
1994/95																	
TOTAL																	

Pass Rate (%) = No. of students proceeded to the following year divided by No. of students present x 100

5. 2 Diploma Programme

	1990/91	1991/92	1992/93	1993/94	1994/94	Total
1st						
2nd						
3rd						
TOTAL						

6. 4 MACHINERY AND EQUIPMENT FOR FISCAL YEAR 1990 - 1994

Page: _____

DEPARTMENT	1990/91	1991/92	1992/93	1993/94	1994/95
Equipment provided or to be expected					

6. 5 JICA Local Cost (k. Shs.)

	Local Research	Textbook/Manual	Exchange Prog.	Seminar	Others	Total
1990/91						
1991/92						
1992/93						
1993/94						
1994/95 (planned)						
Total						

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Emolument	Miscellaneous	Total
1990/91									
1991/92									
1992/93									
1993/94									
1994/95									
Total									

8. I GU/PRODUCTION UNIT

1. Name of Unit : _____
2. Description of Activities :

3. Staff and Organization

4. Balance Sheet in 1992/93

5. 5 JICA Local Cost* (K. Sits.)

	Local Research	Printing	Exchange Prog.	Seminar	Public Re.
1990/91	448,900/00	-	374,000/00	471,155/00	423,409/00
1991/92	1,461,000/00	18,000/00	595,413/80	349,915/00	125,950/00
1992/93	996,800/00	-	395,368/81	648,399/30	-
1993/94					
1994/95					
Total					

* : Including financial support on general affairs such as purchase of stationary, repair work etc.

*Program
To note for discussion*

J.K.U.C.A.T.

BUDGET ALLOCATION - TEACHING DEPARTMENTS

DEPARTMENT	TEACHING MATERIAL AND STATIONERY			TRAVELLING AND ACCOMMODATION EXPENSES		
	ALLOCATION 1992/93 KSHS.	EXPENDITURE 1992/93 KSHS.	ALLOCATION 1993/94 KSHS.	ALLOCATION 1992/93 KSHS.	EXPENDITURE 1992/93 KSHS.	ALLOCATION 1993/94 KSHS.
1. AGRICULTURAL ENGINEERING	150,000.00	213,458.00	200,000.00	25,000.00	38,390.00	15,000.00
2. FOOD SCIENCE & P.H.I.	250,000.00	270,725.00	250,000.00	20,000.00	14,468.00	5,000.00
3. HORTICULTURE	120,000.00	135,833.00	150,000.00	20,000.00	44,994.00	15,000.00
4. ARCHITECTURE	300,000.00	470,438.00	300,000.00	25,000.00	4,707.00	5,000.00
5. CIVIL ENGINEERING	200,000.00	97,253.00	150,000.00	20,000.00	5,678.00	5,000.00
6. ELECTRICAL & ELECTRONICS	250,000.00	140,412.00	220,000.00	20,000.00	20,314.00	10,000.00
7. MECHANICAL ENGINEERING	300,000.00	575,685.00	280,000.00	20,000.00	12,689.00	5,000.00
8. BIOLOGICAL SCIENCES	150,000.00	227,817.00	150,000.00	20,000.00	20,838.00	10,000.00
9. PHYSICAL SCIENCES	200,000.00	363,703.00	220,000.00	20,000.00	14,204.00	10,000.00
10. MATHS & COMPUTER SCIENCE	50,000.00	96,503.00	50,000.00	15,000.00	5,499.00	5,000.00
11. I.H.R.D.	10,000.00	34,040.00	10,000.00	20,000.00	10,989.00	10,000.00
12. TUITION FARM	20,000.00	87,663.00	20,000.00	5,000.00	79,425.00	5,000.00
	2,000,000.00	2,711,530.00	2,000,000.00	230,000.00	202,120.00	120,000.00

NB: PLEASE NOTE THAT THE 1993/94 BUDGET FOR TEACHING MATERIAL HAS NOT CHANGED WHEREAS THE TRAVELLING VOTE HAS BEEN REDUCED BY 50%

7. Local Cost by Kenyan Government (K. Shs.) HORTICULTURE

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Emolument	Miscellaneous	Total
1990/91	421,400.00	800,000.00	2,000,000.-	-	91,580.00	Centralised	2,419,250.-	Central	
1991/92	252,820.00	840,000.00	2,000,000.-	1200,000	84,220.00	Centralised	3,122,160.-	Central	
1992/93	120,820.00	840,000.00	1,400,000.-	1200,000	20,000.00	Centralised	3,228,612.-	Central	
1993/94	120,000.00	840,000.00	1,400,000.-	1210,000	10,000.00	Centralised	2,712,903	Central	
1994/95									
Total									

* These are centralised votes for the whole University.

7. Local Cost by Kenyan Government (K.Shs.) AGRICULTURAL ENGINEERING.

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Emolument	Miscellaneous	Total
1990/91	315,000.00	800,000.00*	2,000,000.-	-	98,960.00	centralised	2,786,400.-	Central	
1991/92	189,000.00	840,000.00*	2,000,000.-	1,200,000	91,020.00	Centralised	3,545,940.-	Central	
1992/93	150,000.00	840,000.00*	1,400,000.-	1,200,000	25,000.00	Centralised	4,331,331	Central	
1993/94	150,000.00	840,000.00*	1,100,000.-	1,200,000	12,500.00	Centralised	4,981,480.-	Central	
1994/95									
Total									

NB * These are centralised votes for the whole University College.

7. Local Cost by Kenyan Government (K.Shs.) FOOD SCIENCE.

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Emolument	Miscellaneous	Total
1990/91	509,000.00	800,000.00*	2,000,000.-	-	74,140.00	Centralised	2,256,300.-	Central	
1991/92	305,400.00	840,000.00*	2,000,000.-	1200,000	68,160.00	Centralised	3,365,000.-	Central	
1992/93	250,000.00	840,000.00*	1,400,000.-	1200,000	20,000.00	Centralised	2,707,749.-	Central	
1993/94	250,000.00	840,000.00*	1,400,000.-	1200,000	10,000.00	Centralised	3,032,678.-	Central	
1994/95									
Total									

NB. These are centralised votes for the whole University College.

7. Local Cost by Kenyan Government (K.Shs.) CIVIL ENGINEERING

	Educational Materials	Research	Library Books/Journals	Seminar/Conference	Transport/Travel	Fuel/Energy	Personal Emolument	Miscellaneous	Total
1990/91	242,400.00	800,000.00*	2,000,000.	-	45,020.00	Centralised	2,666,500.-	Central	
1991/92	220,000.00	840,000.00*	2,000,000.	120,000.	20,200.00	Centralised	2,892,580.00	"	
1992/93	200,000.00	840,000.00*	1,400,000.	1,200,000.	20,000.00	Centralised	4,458,910.0	"	
1993/94	200,000.00	840,000.00*	1,400,000.	1,210,000.	10,000.00	Centralised	4,993,979.0	"	
1994/95									
Total									

*There are centralized vote for the whole University college.