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UNIVERSITY OF ALABAMA
STATEMENT OF COSTS
REDSTONE GRADUATE PROGRAM
1963-64 Academic Year and Summer 1964

	Instructional Portion						Administrative Portion	Grand Total
	Math	Physics	Engineering			Total		
			Mechanics	Electrical	Mechanical			
<u>Huntsville</u>								
8 Full time Professors	\$	\$	\$36,000.00	\$36,000.00	\$24,000.00	\$96,000.00	\$	\$ 96,000.00
5 Half time Professors	18,000.00	12,000.00						30,000.00
3 Courses Research Institute Personnel				4,500.00		4,500.00		4,500.00
54 Part time Instructors	12,000.00	5,600.00	4,800.00	3,200.00	1,600.00	9,600.00	16,000.00	43,200.00
Summer Pay for 6½	2,600.00	1,300.00	5,200.00	5,200.00	2,600.00	13,000.00		16,900.00
1 Technician			2,000.00	2,000.00	2,000.00	6,000.00		6,000.00
Student Assistants	500.00	500.00	500.00	500.00	500.00	1,500.00		2,500.00
1 Director (75% app.)							11,000.00	11,000.00
1 Librarian							8,000.00	8,000.00
1 Registrar							4,000.00	4,000.00
1 Clerical Assistant							3,600.00	3,600.00
3½ Secretaries	1,800.00	1,800.00	1,800.00	1,800.00	1,800.00	5,400.00	4,000.00	13,000.00
Total Salaries	\$34,900.00	\$21,200.00	\$50,300.00	\$53,200.00	\$32,500.00	\$136,000.00	\$16,000.00	\$238,700.00
Travel expenses	3,000.00	1,000.00	2,000.00	2,000.00	2,000.00	6,000.00	3,000.00	13,000.00
Other Operating expenses	1,000.00	1,000.00	2,500.00	2,500.00	2,500.00	7,500.00	3,000.00	12,500.00
Total - Huntsville	\$38,900.00	\$23,200.00	\$54,800.00	\$57,700.00	\$37,000.00	\$149,500.00	\$16,000.00	\$264,200.00

UNIVERSITY OF ALABAMA
STATEMENT OF COSTS
REDSTONE GRADUATE PROGRAM
1963-64 Academic Year and Summer 1964

	Instructional Portion						Other	Administrative Portion	Grand Total
	Math	Physics	Mechanics	Electrical	Mechanical	Total			
<u>Main Campus Costs</u>									
<u>Attributable to program:</u>									
Supervision	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$18,000.00	\$	\$	\$ 30,000.00
Counseling	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	6,000.00	2,000.00		12,000.00
3½ Secretaries	1,800.00	1,800.00	1,800.00	1,800.00	1,800.00	5,400.00		3,600.00	12,600.00
Travel expenses	1,000.00	1,000.00	1,500.00	1,500.00	1,500.00	4,500.00		500.00	7,000.00
Operating expenses	500.00	500.00	500.00	500.00	500.00	1,500.00		500.00	3,000.00
<u>Total Main Campus</u>	<u>\$11,300.00</u>	<u>\$11,300.00</u>	<u>\$11,800.00</u>	<u>\$11,800.00</u>	<u>\$11,800.00</u>	<u>\$35,400.00</u>	<u>\$ 2,000.00</u>	<u>\$ 4,600.00</u>	<u>\$ 64,600.00</u>
<u>Total direct expense</u>	<u>\$50,200.00</u>	<u>\$34,500.00</u>	<u>\$66,600.00</u>	<u>\$69,500.00</u>	<u>\$48,800.00</u>	<u>\$184,900.00</u>	<u>\$18,000.00</u>	<u>\$41,200.00</u>	<u>\$328,800.00</u>
Indirect costs-15% of \$238,700.00									35,805.00
<u>Total Costs</u>									<u>\$364,605.00</u>
<u>Equipment and Library Costs</u>									
One-time Library	\$10,000.00	\$10,000.00	\$ 5,500.00	\$ 4,500.00	\$12,000.00	\$22,000.00			\$ 42,000.00
Annual Library	3,000.00	2,500.00	1,100.00	1,100.00	3,000.00	5,200.00			10,700.00
One-time equipment	2,000.00	2,000.00	30,000.00	35,000.00	36,000.00	101,000.00			105,000.00
Annual equipment	1,000.00	1,000.00	2,000.00	2,000.00	2,000.00	6,000.00			8,000.00
<u>Total</u>	<u>\$16,000.00</u>	<u>\$15,500.00</u>	<u>\$38,600.00</u>	<u>\$42,600.00</u>	<u>\$53,000.00</u>	<u>\$134,200.00</u>			<u>\$165,700.00</u>

The following partial itemizations of equipment and library needs will be helpful in costing the MSE program with emphasis in Mechanical Engineering at Huntsville:

*mech.
Engineering*

Equipment for Laboratory

✓ 1. Visicorder Multichannel Recorder, Minneapolis Honeywell Company	\$6,712.05
✓ 2. Pneumatic Analog Computer plus air cleaner compressor	3,100.00
✓ 3. TR 10 Analog Computer Electronics Associated, Inc.	2,370.00
4. Friden Calculator	880.00
✓ 5. Two oscilloscopes	1,280.00
✓ 6. Vacuum station equipment (est)	7,000.00
✓ 7. Strain gage equipment	1,500.00
✓ 8. Cryogenic equipment (est)	2,000.00
9. Miscellaneous (est)	<u>8,000.00</u>
Total	\$32,842.05

Furniture for Offices and Laboratory

1. Desks, Chairs, file cabinets, typewriter (est)	\$ 1,800.00
2. Benches, tables, cabinets, (est)	<u>1,400.00</u>
Total	\$ 3,200.00

Library, initial outlay

1. Purchase of approximately 400 volumes	\$ 4,000.00
2. Back issues of 15 most important periodicals, transactions, etc.	<u>8,000.00</u>
Total	\$12,000.00

Library, annual outlay

1. Books and subscriptions to periodicals	<u>\$ 3,000.00</u>
Total	\$ 3,000.00

Notes:

1. This will provide the following courses:

	<u>Fall</u>	<u>Winter</u>	<u>Spring</u>	<u>Summer</u>	<u>Total</u>
Math	8	7	7	4	26
Physics	4	4	4	2	14
Mechanics	9	9	9	4	31
Electrical	8	8	8	5	29
Mechanical	5	4	5	2	16
Other Courses					<u>20</u>
Total					136

2. $\$364,605.00 \div 136 \text{ courses} = \$2,680.00 \text{ per course.}$

3. This would provide for students as follows:

Math	100
Physics	50
Mechanics	100
Electrical	100
Mechanical	<u>50</u>
	400

OFFERINGS BY THE DEPARTMENT OF MATHEMATICS IN SUPPORT
OF THE RESIDENT MASTER'S DEGREE PROGRAM--Huntsville, Alabama

<u>First Quarter</u>	<u>Sections</u>
Math (MA) - 122, 123, 255, 4 electives/plus 1 extra section of one course	8
<u>Second Quarter</u>	
Math (MA) - 123, 126, 201, 3 electives/plus 1 extra section of one course	7
<u>Third Quarter</u>	
Math (MA) - 122, 126, 255, 3 electives/plus 1 extra section of one course	7
<u>Summer Quarter</u>	
4 electives	<u>4</u>
	26

The above offerings provide for twenty-six (26) classes (78 semester hours) for the calendar year including core requirements and approved electives for the Master's degree, one separate elective not included in degree requirements for each of three quarters and provision for one extra section of a course in which enrollment may exceed the desired maximum.

Instructional Personnel

First Quarter

5 p/t teachers, 1 class each
1 campus professor teaching one class, directing graduate students
2 new professors teaching one class, directing graduate students
8 classes

Second Quarter

4 p/t teachers, 1 class each
1 campus professor, teaching 1 class, directing graduate students
2 new professors teaching 1 class, directing graduate students
7 classes

Third Quarter

4 p/t teachers, 1 class each
1 campus professor teaching 1 class, directing graduate students
2 new professors teaching 1 class, directing graduate students
7 classes

Summer Quarter

2 p/t teachers, 1 class each
2 new professors teaching 1 class
4 classes

OFFERINGS BY THE DEPARTMENT OF PHYSICS IN SUPPORT OF THE
RESIDENT MASTER'S DEGREE PROGRAM - Huntsville, Alabama

	<u>Sections</u>
<u>First Quarter</u> Physics (PH) - 101, 231, 104 or 105, 237	4
<u>Second Quarter</u> Physics (PH) - 103, 141, 222, 239	4
<u>Third Quarter</u> Physics (PH) - 102, 232, 251, 234	4
<u>Summer Quarter</u> Physics (PH) - 104 or 105 and one of the following: 121, 155, 225, 233, 252, 261	2 <hr/> 14

The above offerings provide for core requirements and approved electives,
14 courses (32 semester hours).

INSTRUCTIONAL PERSONNEL

<u>First Quarter</u> 2 p/t teachers, 1 class each 2 new professors, 1 course and directing graduate students 4 classes
<u>Second Quarter</u> 2 p/t teachers, 1 class each 2 new professors, 1 course and directing graduate students 4 classes
<u>Third Quarter</u> 2 p/t teachers, 1 class each 2 new professors, 1 course and directing graduate students 4 classes
<u>Summer Quarter</u> 2 p/t teachers, 1 class each <u>or</u> 1 p/t teacher from Research Institute, 1 class, and 1 new professor, 1 class 2 classes

University of Alabama
College of Engineering
Department of Engineering Mechanics

PROPOSED GRADUATE ENGINEERING MECHANICS OFFERINGS IN HUNTSVILLE FOR 1963-64

Revised March 4, 1963

<u>TEACHER</u>	<u>FALL QUARTER</u>	<u>WINTER QUARTER</u>	<u>SPRING QUARTER</u>	<u>SUMMER QUARTER</u>
Professor A-	MH 251 MH 395 MH 396	MH 265 GES 221	MH 251 MH 375	MH 366 GES 222
Professor B-	MH 280 GES 221	MH 281 GES 222	MH 382 MH 395 MH 396	
Professor C-	MH 155 MH 390	MH 256 MH 395 MH 396	MH 257 GES 221	MH 155 MH 258
Part-time Teachers	MH 161 MH 286	MH 160 MH 262	MH 161 MH 285	

PROPOSED SCHEDULE OF GRADUATE AND ADVANCED UNDERGRADUATE

ELECTRICAL ENGINEERING COURSES TO BE OFFERED IN

1963-64

by the

UNIVERSITY OF ALABAMA AT HUNTSVILLE, ALABAMA

<u>Fall Quarter</u>		<u>Winter Quarter</u>		<u>Spring Quarter</u>		<u>Summer Quarter</u>	
<u>Professor</u>	<u>Course</u>	<u>Professor</u>	<u>Course</u>	<u>Professor</u>	<u>Course</u>	<u>Professor</u>	<u>Course</u>
Tischer	302	Tischer	303	Tischer	304		
Dowdle	211	Dowdle	221	Dowdle	222		
Dowdle	181	Dowdle	212	Dowdle	182		
Professor A	305	Professor A	205	Professor A	305	Professor A	210
Professor A	177	Professor A	210	Professor A	177	Professor A	306
Professor B	201	Professor B	223	Professor B	215	Professor B	220
Professor B	204	Professor B	178	Professor B	219	Professor B	201
Part-Time	151	Part-Time	185	Part-Time	204	Part-Time	151

Proposed Teaching Loads in the Mechanical Engineering
Graduate Program to be offered at the
Huntsville Center by the University of Alabama

(Revised)

	<u>Fall Quarter</u>	<u>Winter Quarter</u>	<u>Spring Quarter</u>	<u>Summer Quarter</u>
Professor A	*ME 201 - 3 ME 203 - 3 ME 399 - <u>0</u> 6	ME 202 - 3 ME 205 - 3 ME 399 - <u>0</u> 6	ME 208 - 3 ME 210 - 3 ME 296 - 1 ME 399 - <u>0</u> 7	
Professor B	ME 295 - 1 ME 168 - 5 ME 399 - <u>0</u> 6	ME 206 - 3 ME 171 - 3 ME 399 - <u>0</u> 6	ME 204 - 3 **ME 211 - 3 ME 399 - <u>0</u> 6	ME 212 - 3 ME 301 - 3 <u>6</u>
Part Time	ME 151 - <u>3</u> 3		ME 165 - <u>2</u> 2	

- Notes:
- (a) * Core courses
 - (b) **ME 211 or GES 221 or GES 222
 - (c) Since some variation in undergraduate preparation and graduate students' needs will exist, the above listing of courses is to be considered as tentative.
 - (d) The numbers alongside course numbers refer to teaching load credit as used on the main campus.

MATHEMATICS

Equipment:

1. One desk calculator, one typewriter, office equipment and furniture, and classroom equipment. \$ 2,000.00
2. Additional annual instructional and office equipment as needed. 1,000.00

Library:

1. Initial cost for essential books and recent back issues of standard journals. 10,000.00
2. Subscriptions to necessary current journals, acquisition of back issues as they become available, and purchase of selected books. (annually) 3,000.00

PHYSICS

One-time Library

300 basic books already listed at \$12.50	\$ 3,750.00
300 books in specialized research areas -- to be prescribed when areas are established at \$12.50	3,750.00
Back issues of a few basic journals	<u>2,500.00</u>
	\$10,000.00

Annual Library

30 basic journals at \$50.00 year	\$ 1,500.00
Annual book purchases	<u>1,000.00</u>
	\$ 2,500.00

One-time equipment

1 desk calculator	\$ 1,000.00
Office equipment	<u>1,000.00</u>
	\$ 2,000.00

Annual equipment

Scientific and Educational equipment	\$ 1,000.00
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MECHANICS
 SUMMARY OF MINIMUM NEEDS
 FOR ESTABLISHMENT OF MASTER'S DEGREE
 PROGRAM AT HUNTSVILLE CENTER

Library (Huntsville)

Initial expenditure ----	Periodical back issues	\$3,000.00
	Books	<u>2,500.00</u>
	Total	\$5,500.00
 Annual budget -----	Periodicals*	\$ 600.00
	Books	<u>500.00</u>
	Total	\$1,100.00

*This should be increased annually to permit acquisition of additional periodicals.

Equipment (Huntsville)

Photoelasticity Laboratory		
Polariscope	\$5,000.00	
Accessories	<u>2,000.00</u>	\$7,000.00
 Experimental Stress Analysis Laboratory		
60,000 lb. Universal Testing Machine	\$12,000.00	
2 SR-4 Strain Indicators	1,200.00	
1 Multi-purpose Oscilloscope	1,500.00	
1 Ellis BA-12 Bridge Amplifier	800.00	
2 Estensometers	1,000.00	
2 Accelerometers	500.00	
1 Two-channel amplifier and recorder	3,000.00	
Miscellaneous accessories	<u>3,000.00</u>	<u>23,000.00</u>
 Total		 \$30,000.00

An annual budget of \$2,000.00 should be provided.

SUMMARY OF MINIMUM NEEDS
FOR ESTABLISHMENT OF MASTER'S DEGREE
PROGRAM AT HUNTSVILLE CENTER
(Continued)

Other Needs

Huntsville:	See proposals to NASA and to Army (Appendix D)
Main Campus: Travel	----- \$2,000.00 (for recruiting and for travel to and from Huntsville)
Operating expenses	---- <u>500.00</u> (for postage, telephone, office supplies, etc.)
Total	\$2,500.00 <u>ANNUALLY</u>

ELECTRICAL ENGINEERING

Estimated costs for an electrical engineering library at Huntsville are indicated in the following tabulations:

Initial Library Cost

1. 250 books at \$10.00	\$2,500.00
2. Microfilm copies of 15 years of back issues of all publications of the American Institute of Electrical Engineers, the Institute of Radio Engineers, and 20 other selected journals.	<u>2,000.00</u>
Total	\$4,500.00

Annual Library Expenditures

1. 50 books at \$10.00	\$ 500.00
2. Subscription to all publications of the Institute of Electrical and Electronics Engineers	203.00
3. Subscription to 20 additional selected journals at \$20.00	<u>400.00</u>
Total	\$1,103.00

These estimated expenditures for an electrical engineering library assume supporting libraries in other branches of engineering as well as in physics and mathematics.

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BASIC EQUIPMENT FOR INSTRUCTIONAL ANALOG COMPUTER LABORATORY ASSOCIATED WITH
ELECTRICAL ENGINEERING COURSE EE 210

<u>Quantity</u>	<u>Item</u>	<u>Unit Price</u>	<u>Total Price</u>
3	Donner 3400 Analog Computers	\$2,190.00	\$ 6,570.00
3	Donner 3016 Floor Mounting Bases	60.00	180.00
3	Donner 3021 Shelf Units	85.00	255.00
3	Donner 3013 Blower Units	150.00	450.00
3	Donner 3073 10-turn Potentiometer Strips	320.00	960.00
3	Donner 3750 Function Generators	425.00	1,275.00
3	Donner 3731 Electronic Multipliers (2 channels)	995.00	2,985.00
3	Donner Component Groups Selection D	586.50	1,759.50
3	Donner 3965 Operational Relays	45.00	135.00
3	EAI 1100E Variplotters	1,850.00	<u>5,550.00</u>
	Total		\$20,119.50