



GRADUATE SCHOOL OF BUSINESS ADMINISTRATION

UNIVERSITY OF FLORIDA · GAINESVILLE 32611

Robert F. Lanzillotti, Dean · 904-392-2397

A G E N D A

College of Business Administration
and School of Accounting

General Faculty Meeting

October 2, 1984

4:00 p.m.

102 New Business Building

1. Minutes of previous meeting (attached)
2. Recommendations from Undergraduate Committee (Denny)
 - a) Proposed new course - MAN 4504 (attachment 1) ^{AREA} MAJOR, ^{PGM} U, m
 - b) Proposed change in ECO 3411 and COP 3210 (attachment 2) ^{PREP} U dup ECO 3411
^{CORE} U add ECO 3411
 - c) Proposed change of ECO 3411 to GEB 3121 designation (attachment 3) ^{PREP} U ^{old COP 3210} ADMIN U
 - d) Proposed addition of prerequisites to MAR 3023 (attachment 4) ADMIN U
 - e) Requirement of "C" or better in MAR 3023 to be marketing major ^{DEGREE}, U, m (attachment 5)
3. Other Business

NOTE: Graduate Faculty Meeting will immediately follow.

ATTACHMENT 1

The proposal is to add MAN 4504 to management curriculum as an management elective.

NEW COURSE TRANSMITTAL FORM

(For A Course Not Currently In Existence At This Institution)

PLEASE COMPLETE ALL ITEMS - SEE DATA DEFINITIONS ON REVERSE SIDE

Institution UF Campus N/A FICE 1535
Department Management & Administrative Science Discipline _____
Course Title Operations Management
Credit Type 0 Credit Hrs. 4 Lecture Credit Hrs. _____ Lab Credit Hrs. _____
Other Hrs. _____

Recommended Prefix MAN 4504
Alpha First Digit Taxonomy Number Lab Indication
Catalog Course Description: Managerial concepts and quantitative tools required in the design, operation and control of manufacturing and service systems and their relationship to other business functions.

Include prerequisites and corequisites by prefix and number as a part of the catalog description. State below the pre and corequisites in terms of content (see reverse).

Prerequisites OMB 3700
Corequisites _____

Intended Students (check all that apply):
 Undergraduate Majors _____ Undergraduate Non-majors _____ Graduate Students Only _____
Advanced Undergraduates and Graduate Students _____ Others (specify) _____
Level: Introductory _____ Advanced _____ Other (specify) _____
Major topics (Use additional sheets as necessary) see attached

List any other course(s) in the University catalog dealing with similar subject matter: EIN 4333, EIN 4335, EIN 4365, EIN 4221C

List the department chairmen (by name and department) with whom you have cleared the question of possible duplication or infringement by this course. Each such chairman must either sign the outline requested below to indicate no concern over possible duplication or infringement, or he must comment. Any lack of comments or signatures must be explained.

D. J. Elzinga, Industrial and Systems Engineering
List teaching materials, textbook(s), and instructor (include status on Graduate Faculty if applicable): See attached, H. Benson, S. Erenguc, W. Webster

How frequently do you expect to offer this course and what class size is expected? Fall semester, 40 students

Indicate the number of lecture, discussion, and laboratory meeting hours per week: Four lectures

Term in which course will be first offered: Fall 1985

Please attach a one-page outline of the proposed new course.
Rachel Steyer 9/11/84
Signature of Department Chairman Date Signature of College Dean Date

APPROVED _____ DISAPPROVED _____ Effective Date _____
Last date For inclusion in catalog copy _____

Chairman, Curriculum Committee/Institutional Liaison Officer _____ Date _____

FOR FACULTY DISCIPLINE TASK FORCE AND SYSTEM STAFF USE ONLY:

Approved Prefix and Number _____ Rec. # _____ HEGIS _____ USOE _____
Generic Course Title _____
Century Title _____
Decade Title _____

Reviewed by: _____ Date _____
Discipline Task Force Representative
Input into Data Base _____ by _____ Date _____

MAN 4504 (Proposed)

INTRODUCTION TO OPERATIONS MANAGEMENT

Course Objectives:

1. To provide an understanding of the function of operations within manufacturing and service industries.
2. To develop an understanding of the operations function, its design, strategic implications and relationship with marketing, financial and other organizational activities.
3. To develop and study models which include important elements of the problems faced by the operations manager.
4. To develop the managerial skills of the student by placing him/her in the role of the manager and addressing the managerial implications of the problem and solution methodologies.
5. To provide knowledge of methods of analysis including appropriate applications of quantitative methods, behavioral concepts, and information systems ideas.

Textbooks:

1. Evans, Anderson, Sweeney and Williams, Applied Production and Operations Management, West Publishing Co., 1984 (EASW).
2. Meier, Johnson, Newell, Schreiber, Cases in Production and Operations Management, Prentice-Hall, 1982 (MJNS).
3. Marshall, Abernathy, Miller, Olsen, Rosenbloom and Wyckoff, Operations Management, Text and Cases, Irwin, 1975 (MAMORW).

<u>Week</u>	<u>Topic</u>	<u>Chapter (EASW)</u>
5-6	Resource-Requirements Planning Production Capacity Analysis at Champion International	7
7	Facility Location and Distribution System Design (a) Designing the Hunt-Wesson Distribution System (b) An Application of Warehouse Location to Bloodmobile Operations	8
8	Process Analysis The Automatic Factory	9
9	Process Design and Facility Layout Design of a University Library Work Room	10
10	Job Design and Work Measurement (a) Human Factors Applications in Job Design at Lockheed (b) Adapting Work to People at Volvo	11
11	Inventory Policy ABC analysis at Devro, Inc.	12
12	Aggregate Production Planning and Master Scheduling Production Planning at Ethan-Allen	13
13	Material Requirements Planning (MRP) (a) Applying MRP at Exxon Office Systems (b) Just-in-time Production at Deere & Co.	14
14	Operations Scheduling and Production Control A System for Truck Fleet Scheduling	15
15	Quality Control Quality Certification at the Naval Air Rework Facility	17

The proposal is to delete ECO 3411 from business administration curriculum and replace with new course GEB 3121 - Advanced Business Statistics.

Institution UF
Campus N/A
FICE 1535

NEW COURSE TRANSMITTAL FORM
(See Reverse for Instruction)

Form UCC 1 Rev.80
OAA# _____

Department: General Business Discipline: Statistics
Course Title: Advanced Business Statistics

Credit Type: Semester Total Credit Hours 3 Lecture Credit Hrs. 3

Recommended CNS Prefix and Number: GEB 3 1 2 1
Alpha First Taxonomy Number Digit
Lab Credit Hrs. _____
Other Hrs. _____
Lab indicator (C or L) _____

Catalog Course Description: Correlation and linear regression, multiple regression, model building, multiple regression and analysis of variance. Regression modeling with computer application for business problems.

State the pre and corequisites in terms of content (see reverse):

Prerequisites Introductory Statistics (STA 3023)

Corequisites _____

Intended Students (check all that apply): Undergraduate Major _____ Others (specify) _____
 Undergraduate Non-Majors _____
Level (see reverse): Adv. Undergrad. & Graduates _____
 Graduate Students Only _____

Introductory _____ Advanced _____ Other (specify) _____

List major topics here and attach a one-page outline of the proposed course;
linear regression, multiple regression, model building, residual analysis, analysis of variance

List any other course(s) in the University catalog dealing with similar subject matter;
none STA 4202

List the department chairperson (by name and dept.) with whom you have cleared any question of possible duplication or infringement by this course. Each such chairperson must either sign the outline requested below to indicate no concern over possible duplication or infringement, or make comments. Any lack of comments or signatures must be explained.

Dr. Schaffer (Statistics Dept.)

List teaching materials, textbook(s), and instructor (include status on Graduate Faculty if applicable): A Second Course in Business Statistic: Regression Analysis (Mendenhall & McClave) SAS Computer program,

James McClave (Graduate Faculty)

State the quarter in which the course will be first offered: Fall 1985

John Keuff 9/20/84
Signature of Department Chairperson Date Signature of College Dean Date

Signature of Graduate Dean (if applicable) Date

Approved _____ Disapproved _____ Effective Date _____

Chairman, UCC/Liaison Officer _____ Date _____ Last date for inclusion in catalog copy: _____

FOR FACULTY DISCIPLINE TASK FORCE AND SYSTEM STAFF USE ONLY:

Approved Prefix and Number _____ Rec. # _____ HEGIS _____ USOE _____

Generic Course Title _____

Century Title _____

Remarks: _____

Reviewed by: _____

Input into Data Base _____ by _____ Discipline Task Force Representative _____ Date _____
Date _____

Course Syllabus

ECO 3411
Fall Semester, 1984

Economic and
Business Statistics

Robert S. Jacob
315-A Business Bldg.
392-5815

Office Hours: To be announced.

Text: A Second Course in Business Statistics: Regression Analysis
Mendennhall, W. and McClave, James T.

Course Description: This is a three-hour second course in statistics. You should have previously taken at least one course in statistics which covered introductory probability, sampling distributions, estimation, and hypothesis testing (e.g., STA 3023 at UF). Regression analysis receives special emphasis in this course although other topics are included.

Note: If it has been more than one term since you took the introductory course, you are strongly advised to spend a substantial amount of time reviewing during the first several weeks of this term.

Course Objective: The objective of ECO 3411 is to build upon the statistical foundation established in your introductory course. More specifically, the intent is to familiarize you with topics in statistics which are particularly relevant to your academic program in the business school. A "cookbook" approach will not be employed; this will not be an exercise in memorizing formulas. Instead, a thorough understanding of the methods and concepts will be stressed.

Course Policy:

1. Exams - There will be three one hour exams given. The first two will be a multiple choice exam, administered during a two-hour period in the evening to ensure that all students have sufficient time to complete the exam. The second exam is a cumulative final exam, and will be administered during the scheduled final exam period.
Tentative exam dates are listed below:

EXAM I	Thursday, Oct. 4	5:45-7:45 p.m.	Rooms T.B.A.
EXAM II	Thursday, Nov. 8	5:45-7:45 p.m.	Rooms T.B.A.
FINAL	Monday, Dec. 10	5:30-7:30 p.m.	Location will be announced in class

All exams are closed book and closed notes. A formula sheet and necessary statistical tables will be provided. Tests are computer scored, so please bring a NO. 2 pencil to each exam. Calculators will be permitted, and your picture I.D. must be presented when turning in exam.

Only a bona-fide excuse presented prior to the exam will be honored.

Course Outline

<u>Week</u>	<u>Topic</u>	<u>Chapter</u>
1	Review	1, 2
2	Simple Linear Regression	3
3	Simple Linear Regression	3
4	Multiple Regression	4
5	Multiple Regression	4
6	Multiple Regression	4
7	Multiple Regression: Exam I	6
8	Model Building: Project I due	6
9	Model Building	6
10	Model Building	6
11	Case Studies:	10-14
12	Residual Analysis: EXAM II	7
13	Residual Analysis	7
14	Case Studies	10-14
15	Analysis of Variance: Project II due	9
16	Analysis of Variance	9

ChapterSuggested Test Exercises

2(Review)

At least 1 problem from each section. If necessary, do extra problems in those sections in which you are weakest.

3

2, 3, 6, 8-10, 12-15, 18-24, 26-29, 32, 34, 35, 38, 40, 42, 44

4

1-6, 8-24

6

1-6, 8-31

7

1-17

- HB
1355
.F6
F55A
Reference
- Florida Department of Health and Rehabilitative Services
Florida Accidental Death Statistics
- HC
107
.F6
F561
1981
Ref. Reserve
- Florida Division of Economic Development
Florida County Comparisons
- HC
107
.F6
F44253
1981
Ref. Reserve
- Florida Division of Economic Development
Florida and the Other Forty-Nine
- HA
12.5
.U63
Reference
- United Nations
Statistical Yearbook
- L
111
.A6
Reference
- Digest of Education Statistics (National Center for Education Statistics)
- HA
203
.A22
Reference
- U.S. Dept. of Health and Human Services.
Vital Statistics of the United States
- HA
17
.D45
Reference
- United Nations. Statistical Office.
Demographic Yearbook.
- AZ
361
.U45
Reference
- United Nations Educational, Scientific, and Cultural Organization (UNESCO).
Statistical Yearbook.
- Two excellent indexes to statistics are:
- R016.3173
A512
Index Room
Reference
- A.S.I. (American Statistics Index).
A comprehensive guide and index to the statistical publications of the U.S. government. The "Index Categories" has geographic breakdowns such as "By City," "By County," and "By SMSA." Check to see whether the publications are available either in paper (if depository) or in microfiche (if non-depository).

ECO 3411: Project I

Applying Simple Linear Regression Analysis to Real Data

DUE DATE: October 11

1. Data: Select (or accumulate) a realistic data set, one of interest to you. Your data should consist of a sample of a least thirty observations ($n \geq 30$) on two quantitative variables. Choose one of the variables, y , as the variable to be predicted (or dependent variable) and the other variable, x , as the predictor (or independent) variable. For example, you might want to predict monthly GNP, y , from the monthly inflation rate, x .
2. Analysis: Using the techniques discussed in class (Chapter 3), conduct a complete simple linear regression analysis on the data. You may perform your calculations with a hand or pocket calculator, however you will not be required to use the computer for this project.
3. Report: Your report must be typed. Your results should be reported in a clear and concise manner, as if you were the project statistician writing the final report for your client. Explain the practical as well as the statistical significance of your results. Include a listing of your data and its source. There is no format to the project. You should include all analysis and interpretations taught in class.

Note: Any student caught turning in a project from a previous semester or similar to another student from this semester will receive an E in the course and the case will be turned over to the Honor Court for further action.

4. Grading:

Categories

Model Hypothesis/Model Rationale/Model Fitting	10 pts.
Model Assumptions	5 pts.
Model Adequacy (Inferences)	10 pts.
Model Interpretation	12 pts.
Prediction or Estimation	8 pts.
Conclusions/General Interpretation	5 pts.
	<u>50 pts.</u>

Note: 5 points per day will be subtracted for late papers. A reference list of possible data sources is given in this handout.

8A

BETA VALUE REGRESSION EXAMPLE -- FINANCE

SIMPLE LINEAR MODEL
ESTIMATE CORRESPONDING TO MARKET IS STOCK A 'BETA VALUE'

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: STOCK_A ROR FOR STOCK A				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	744.00396825	744.00396825	558.28
ERROR	6	7.99603175	1.33267196	PR > F
CORRECTED TOTAL	7	752.00000000		0.0001

R-SQUARE	C.V.	STD DEV	STOCK_A MEAN
0.989367	46.1756	1.15441412	2.50000000

SOURCE	DF	TYPE I SS	F VALUE	PR > F
MARKET	1	744.00396825	558.28	0.0001

SOURCE	DF	TYPE IV SS	F VALUE	PR > F
MARKET	1	744.00396825	558.28	0.0001

PARAMETER	ESTIMATE	T FOR HO: PARAMETER=0	PR > T	STD ERROR OF ESTIMATE
INTERCEPT	-0.93650794	-2.16	0.0739	0.4328698
MARKET	1.71825397	23.63	0.0001	0.07272125

OBSERVATION	MARKET	OBSERVED	PREDICTED RESIDUAL	LOWER 95% C.I	UPPER 95% C.I
1	1	2.00000000	0.78174603	-2.21963366	3.78312573
2	-5	-10.00000000	1.21825397	-9.52777775	-12.77248585
3	12	18.00000000	-0.52777775	-19.68253768	-16.28306970
4	5	9.00000000	19.68253768	-1.68253968	16.19786300
5	7	12.00000000	-1.68253968	7.65476190	23.16721636
6	0	-1.00000000	7.65476190	1.34523810	4.61147610
7	-6	-12.00000000	11.09126984	0.90873016	10.64804771
8	2	2.00000000	-0.90873016	-0.93650794	7.46585702
9	10	.	-0.06349206	-11.24603175	14.21668266
			-11.24603175	-0.93650794	-3.95367063
			-0.75396825	-0.06349206	2.08065475
			2.50000000	-0.75396825	-14.56312140
			-0.50000000	2.50000000	-7.92894210
			16.24603175	-0.50000000	-0.49610022
				16.24603175	5.42610022
					12.02894210
					19.56312140

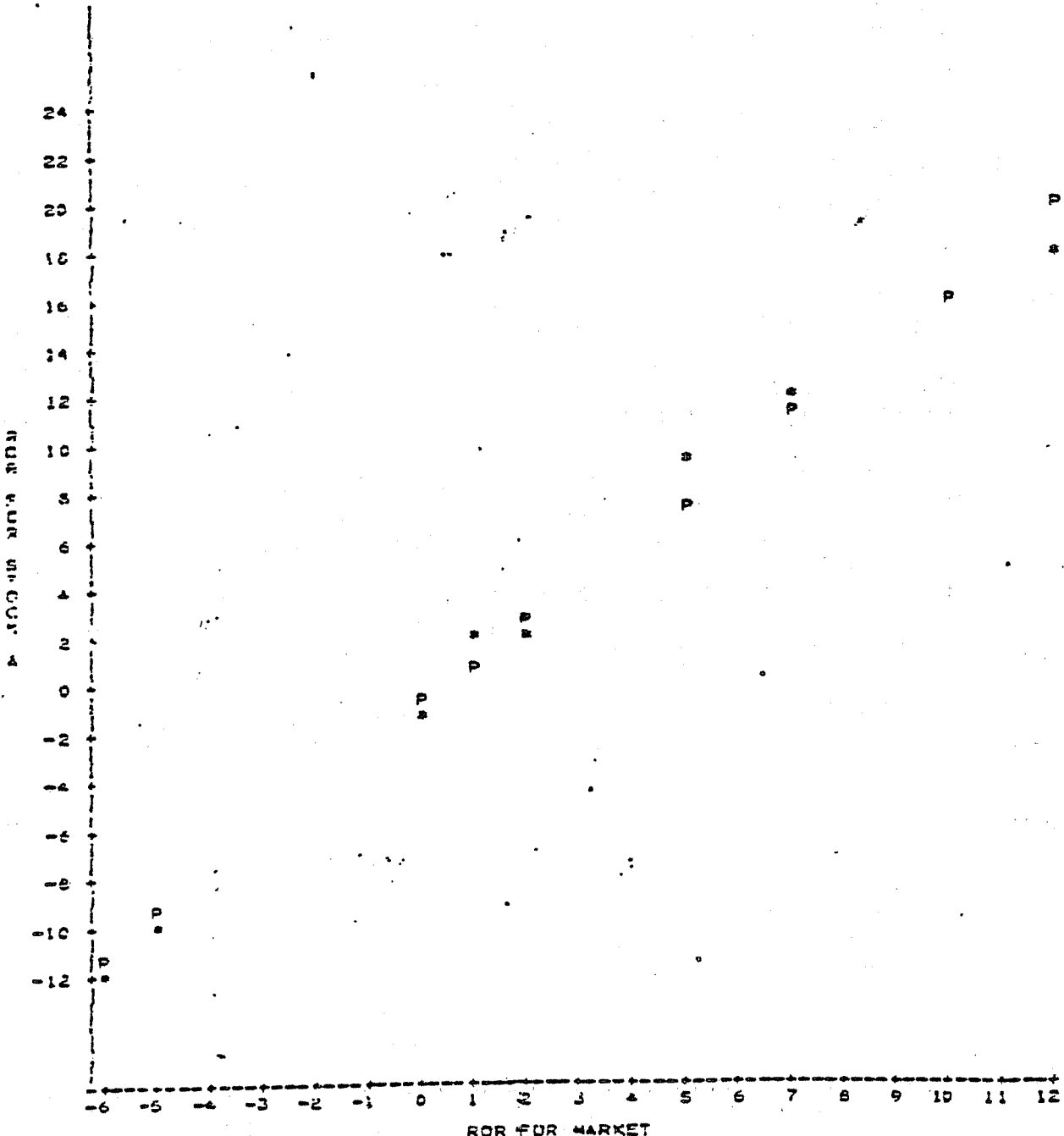
* OBSERVATION WAS NOT USED IN THIS ANALYSIS

SUM OF RESIDUALS	0.00000000
SUM OF SQUARED RESIDUALS	7.99603175
SUM OF SQUARED RESIDUALS - ERROR SS	-0.00000000
FRESS STATISTIC	20.36578275
FIRST ORDER AUTOCORRELATION	-0.25684745
DURBIN-WATSON D	1.89681940

9a

BETA VALUE REGRESSION EXAMPLE -- FINANCE
PLOT OF PREDICTED (P) AND ACTUAL (*) VALUES

PLOT OF STOCK_A*MARKET SYMBOL USED IS *
PLOT OF PREDICT*MARKET SYMBOL USED IS P



NOTE: 1 OBS HAD MISSING VALUES OR WERE OUT OF RANGE

ECO 3411
SAS Computer Language

Your SAS program cannot be run using the VAX system. It must be run using cards (available at the Hub), or using TCP (few of you will know this method).

Introduction

All computer programs will contain two major components:

- I. Job Control Language (JCL)
- II. SAS Program

The first component, the JCL, gets you on the computer; it is the key that unlocks the power of the computer.

The second component, the SAS program, is the part which performs the regression analysis; it fits the models you specify.

In the following we will describe the "cards" necessary to run a program. By cards, we mean either IBM punch cards, or lines you enter on a terminal. Consult with teaching assistants if you have never run a program before.

Note: Capital letters in the card descriptions should be typed exactly as shown; lower case letters will be replaced by the appropriate substitutes for your program.

I. Job Control Language

The following cards are necessary:

Card 1 //jobname JOB (xxxx,xxxx,2,1,0),lastname,CLASS=Q

Card 2 /*PASSWORD seq,password

Card 3 // EXEC SAS

Card 4 SJOB

Notes

1. On Card 1, you supply:

- a) - The 'jobname', any name consisting of up to 8 letters.
- b) xxxx,xxxx is the 8-digit account number and will be given by the instructor.
- c) Your last name, where 'lastname' is shown.

Note: SAS gives you freedom in naming your independent and dependent variable. For example, you could name your dependent variable (Y) PRICE, and your independent variables ($X_1 - X_5$), respectively, FLOORHGT, DISTELEV, OCEANVU, ERDUNIT, and FURNISH. (SAS variable names cannot be more than 8 characters long.) Then your input card would read:

```
INPUT PRICE FLOORHGT DISTELEV OCEANVU $ ERDUNIT $ FURNISH $;
```

Card 3 CARDS;

Card 4 Data cards

Card 34 These cards contain the data. Each card contains one value for each variable, in exactly the same order as listed on the Input card (Card 2). At least one blank must be left between variables. For example, using Appendix V (p. 615), the data card for the condominium unit identified by observation (OBS) #10 would look like this:

```
26400 3 15 Y N N
```

You should end up with one data card for each observation (i.e., at least 30 data cards for your project).

Note: Data cards are the only SAS statements which do not end with a semicolon.

Important - When entering qualitative variables, for example sex (Male and Female), enter a M or F, not 0 or 1. SAS will automatically code the qualitative variable using the 0-1 convention. Also, there is no restriction on the number of values the qualitative variable can take on. For example, you may have a qualitative variable COLOR at 3 levels (RED, GREEN, BLUE).

Card 35 PROC PRINT;

To obtain a listing of your raw data, insert a PROC PRINT card after the last data card.

NOTE: The Data Input cards (cards 1-34 in this example) must be included in all your SAS programs. The PROC PRINT card is only necessary the first time you run a SAS job.

2. SAS Regression Program

Card 1 PROC GLM:

Card 2 CLASSES X3 X4 X5;

The CLASSES statement should be used only to identify qualitative variables. If you have no qualitative variables, don't use a CLASSES statement. Remember, each variable in the CLASSES statement is a single qualitative variable - these are not the different levels. For example, X3 might represent SEX and X4 might represent RACE.

Card 3 MODEL Y = X1 X2 X3 X4 X5 X1*X2 X1*X1 X2*X2

Card 4 / SOLUTION P CLI;

Card 3 specifies the model, including second order terms and interactions

Card 8 PROC CHART;

Card 9 VBAR RESID/TYPE=PERCENT:

Cards 8-9 general a relative frequency histogram for the residuals in order to check the normality assumption.

4. Final Model Plots - To be used with your best model only

The following program gives the SAS statements necessary to plot your final model. These plots will aid in the interpretation of the final model. Although the program is fairly sophisticated, it may be easily adapted to your data. However, you should discuss your particular situation with a teaching assistant before you attempt to run this program. If you run the program and an ERROR occurs, make sure you bring your printed output to the assistant for debugging purposes.

This example assumes that your input data set is named MYDATA. If you use a different name, be sure to substitute this name for MYDATA. Also, we assume that X1 and X2 represent quantitative variables and that X3 is a qualitative variable.

Card 1 DATA MYDATA;

2 INPUT X1 X2 X3 \$;

3 CARDS;
[data cards]

4 DATA PLOT1;

5 DO X1 = low TO hi BY inc;

6 X2 = low;

7 X3 = 'a'; OUTPUT;

8 X3 = 'b'; OUTPUT;

9 X3 = 'c'; OUTPUT;

10 X2 = med;

11 X3 = 'a'; OUTPUT;

12 X3 = 'b'; OUTPUT;

13 X3 = 'c'; OUTPUT;

14 X2 = hi;

15 X3 = 'a'; OUTPUT;

16 X3 = 'b'; OUTPUT;

17 X3 = 'c'; OUTPUT;

18 END;

IV. Example of a SAS Program: Homework

To familiarize you with the JCL, SAS language, and SAS output, try running the SAS program below for practice. This is the fast-food sales example, ppg. 263-264.

```

Card 1 //PRACTICE JOB (xxxx,xxxx,2,1,0),lastname,CLASS=Q
Card 2 /*PASSWORD seq,password
Card 3 // EXEC SAS
Card 4 $JOB
Card 5 DATA FASTFOOD;
Card 6 INPUT CITY $ TRAFFIC SALES;
Card 7 CARDS;
Card 8 1 59.3 6.3
      :   :   :
      :   :   :
Card 19 2 44.6 5.2
Card 20 PROC PRINT;
Card 21 PROC GLM;
Card 22 CLASSES CITY;
Card 23 MODEL SALES = CITY TRAFFIC
Card 24 / SOLUTION P CLM;
Card 25 OUTPUT OUT=NEW PREDICTED=YHAT RESIDUAL=RESID;
Card 26 PROC PLOT;
Card 27 PLOT RESID*(YHAT TRAFFIC) = '*';
Card 28 PLOT YHAT*TRAFFIC = CITY;
Card 29 PROC CHART;
Card 30 VBAR RESID/TYPE=PERCENT;
Card 31 /* E0J

```

Data on page 263 — Use only data for
CITY = 1 of 2

ATTACHMENT 5

The proposal is that a student desiring to major in marketing must have earned a grade of "C" or better in MAR 3023.